The Journal of the American Pharmaceutical Association

Volume I JANUARY, 1912 No. 1

THE POLICY OF THE JOURNAL.

THE JOURNAL is not an object but an instrument. The American Pharmaceutical Association does not exist for the purpose of producing this publication, but the latter has been brought into existence to serve the necessities of the Association. Except for its ability to render this service in more complete manner and form than can be rendered by other existing agencies, the JOURNAL has no excuse for being.

The prime object of the JOURNAL is to furnish a more direct and speedy means of communication between the Association and its members than is possible through the columns of the other pharmaceutical journals. The latter, while they have been lavishly liberal in extending the use of their columns to the Association, can not, in the very nature of things, report its proceedings and the activities of its officers and committees with the fullness and detail necessary to the complete information of the members; while to withhold this information until the issue of the annual volume, or year book, as has been done hitherto, is to withhold it until it possesses value for only one division of the Association, towit, the Section on Historical Pharmacy.

Beyond the extent necessary to adequately discharge its mission as the official organ of the Association, the JOURNAL will not, under its present editorial control, attempt to enter the field served by the general pharmaceutical press.

The reason for this self-limitation of function is sufficiently obvious. Evidently the Association would not add to its reputation nor increase its service to pharmacy by adding another to the numerous excellent publications addressed to the general drug trade, while to produce one that would be superior to the better of those now existing would not only tax its resources to the utmost, but would require a far more elaborate organization and much wiser and more efficient editorial direction than have been provided.

In fine, the JOURNAL will be satisfied to be and remain the official organ of the Association, and the first and last test that will be applied to any proposed policy or utterance will be its ability to serve the welfare of the Association and the cause for which it labors.

In pursuance of this policy, the JOURNAL will accept subscriptions outside of

its own members, but will not actively seek them, and its acceptance of such outside subscriptions will be based mainly upon the hope that the chance subscribers will thereby be attracted to and become members of the Association.

So also, the JOURNAL will accept advertising, but will not actively canvass for it. In its advertising policy the JOURNAL will be as independent as a government publication, or even more so, if common report be not a libel monger; and no firm will be big enough or rich enough to warp its editorial utterances, or buy space for the advertisement of any substance or service considered to be out of harmony with the expressed or plainly implied professions of the Association. The five formal rules of censorship to be found on another page are printed upon the face of every contract, and should this pentalogue be infringed upon it will be due to the defective knowledge or judgment of the person whose duty it is to decide upon admissions and exclusions rather than to conscious evil intent.

While the JOURNAL will not knowingly accept advertisements not in accordance with the ethical professions of the Association, it will not undertake to run amuck with every individual or interest with which it does not agree. When duty seems to require it, the JOURNAL will not hesitate to discuss such topics with candor and directness, but, it is hoped, always temperately and with fairness. In defining its stand upon moral and ethical questions, the JOURNAL will not lack aggressiveness, but it will especially aim to be aggressive in minding its own business.

Any close observer will soon discover that the publication which makes the loudest profession of ethical cleanness is not necessarily the most nearly aseptic. Over noisy declarations of holiness, like the smell of chlorinated lime in a closet, usually indicates the presence of something that needs disinfection, and no advertising solicitor has ever earned such commissions as the club of the condemnatory editorial.

In selecting articles for admission to the reading columns regard will be had to the peculiar make-up of the Association.

The several branches of pharmacy very properly have their separate associations and separate organs, but as the A. Ph. A. aims to represent pharmacy as a whole, and as a grand division of human vocations, it acknowledges a duty to every legitimate subdivision and to every individual connected therewith, and professes to afford a forum where all may have a fair hearing and be judged according to the evidence and argument.

In a public address delivered many years ago, the writer referred to the A. Ph. A. as the clearing house of pharmaceutical opinions because it afforded every branch of pharmacy the opportunity to present its own views and to advocate its peculiar policies. The same will be true of its official organ, and the editor will as readily print the views of those who do not agree with him, as of those who do, provided they are in other respects of sufficient merit to warrant the use of the space required, and are free from offensive personalities.

In what is said above the editor is assuming that his statements fairly represent the collective opinion of the Association as to what should be the scope and policy of its official organ. Should subsequent events prove that, either in this or in other respects, he has erred in gauging the intentions of the society, he

stands ready to retire in favor of any one deemed better able to correctly appraise and properly express its purposes.

According to a resolution adopted at the Richmond convention, and as yet not formally repealed, "editorials shall be limited to synoptical references to the current JOURNAL, and on stated questions must be confined to the attitude of the Association."

This resolution, or so much of it as is understandable, would, if literally interpreted, reduce editorial utterances to mere perfunctory expressions which might as well be left unexpressed. The editor will presume, therefore, to adopt a somewhat more liberal construction, and will proceed upon the theory that he is to have "reasonable latitude of action," always acknowledging full responsibility to the Association for the manner in which he shall exercise his discretion.

In some respects the editing of a journal is like the stirring of a soft coal fire —the average onlooker feels that he could perform the operation somewhat more efficiently than the individual who has the poker—an opinion which in the present case will doubtless be frequently justified by the facts. The editor does not, therefore, expect to escape criticism, or even to avoid giving just cause for it, but would call the attention of his critics to the tolerant spirit of the notice said to have been posted in a frontier concert hall, "Please don't shoot the man at the piano; he's doing the best he knows how." J. H. BEAL.

<□>

THE OPPORTUNITY OF AMERICAN PHARMACY.

The pharmacist is coming into his own. His light is no longer to be hid under a bushel. His profession is now regarded as a learned one and the pharmacist is recognized as having a place in the society of scholars.

The progress in pharmaceutical education and the raising of the standard of pharmaceutical efforts have been the leading causese in the development of pharmacy as it stands today.

The time has long gone by when any man, no matter whether he had the training or not, commanding a few hundred dollars, could open a corner drug store, without leave or license. In nearly every state the laws regulating the practice of pharmacy are now rigid, and when properly enforced, restrict the practice of this profession to those qualified to follow it. At the same time the colleges of pharmacy have raised their standards of entrance and stiffened their requirements of graduation to such a degree that the young graduate may with some right claim the title "doctor."

Another step in the direction of the greater dignity of the profession has been the enactment of state and national laws securing to the pharmacist a degree of certainty that he is handling the articles which bear the names. It must be a great satisfaction to the honest, upright and ambitious pharmacist that he is absolutely certain of the wares in which he deals. This certainty to some degree assists in eliminating unfair competition which has been the stumbling block over which so many well meaning pharmacists have fallen.

Further, the publicity which has been given in the last two or three years to the enormous frauds which have been practiced in certain patented and pro-

prietary articles has turned the gaze of the public with great expectancy towards the re-established drug store.

The people are beginning to understand that they have been deceived by the false and sometimes criminal misleading claims of virtues which are wholly mythical. The many millions of dollars which during the last few years have been wasted on crude, imperfect and useless remedies may and will soon be saved to the public, and a great part of this will be turned into legitimate pharmaceutical channels.

It is utterly unfair to the pharmacist to require him to undergo long years of preparation and pass the most rigid examinations to practice his profession and then for him to meet at every point the unjust competition of Dr. Quack, who has never taken a degree or passed an examination. The most efficient control of the proprietory medicine trade directly to the public, would be to require every maker or vendor of these make-believes to pass a rigid examination for pharmacy and medicine in every locality where his wares are offered for sale, through the newspapers or otherwise.

Great help is coming in this line also by the awakening of ethics in the press. Many magazines and newspapers are now carefully studying the character of the advertisements for healing articles which are offered them, with a view to the exclusion of those which are false and misleading.

The registered pharmacist, in my opinion, will be rid, in the near future, of this unjust and dangerous competition.

Pharmacy is also soon to have the advantage of the best Pharmacopoeia which has ever been published in any land. All over this country are found devoted scholars and competent specialists who are giving freely of their time and efforts to the most careful and painstaking revision of this important standard. While it is not expected that the new book will be absolutely perfect or complete in scope it will undoubtedly be the greatest aid to the pharmacist, from the scientific point of view, which has ever been put into his hands.

The people of this country are beginning finally to appreciate pharmacy as a profession which has their best interests at heart. They are beginning to look upon the pharmacist as a man of learning and one devoted to his duties. They will soon appreciate the fact that the only safe place to get a real remedy is at the near by drug store.

HARVEY W. WILEY.

Showing Hydrastis beds of Dr. G. W. Homsher, Camden, Ohio.

THE CULTIVATION OF HYDRASTIS.*

JOHN URI LLOYD, PHAR. M.

NAMES. Hydrastis is known under the name *Golden Seal,* by reason of the yellow, seal-like scars on its fresh rhizome. The name *yellow root* is extensively employed by collectors, while the name *yellow puccoon,* once common, is now practically obsolete. The following names have also been employed to designate Hydrastis, for obvious reasons; *eye balm* and *eye root,* because of its use in eye affections; *Indian paint, yellow paint* and *Indian dye,* because the North American Indians used the root for coloring purposes; *Indian turmeric, wild turmeric, golden root, curcuma, Ohio curcuma,* and *wild curcuma,* because the drug resembles curcuma; *jaundice root,* because of its yellow color; *yellow eye,* because of the yellow scars (eyes) above alluded to; and *ground raspberry,* because of its red berry, resembling a raspberry. The name most used, from the beginning to the present date, is *Golden Seal.*

NATIVE DISTRIBUTION. Originally, Hydrastis was more or less abundant over the wooded portions of Ohio, Indiana, Kentucky and West Virginia, Cincinnati

* This article is written in the first person, and, by request of the editor, gives facts concerning Hydrastis culture as observed in my own experimentations, corroborated by others known to me personally. No attempt has therefore been made to embody the experiences of persons who have heretofore printed articles on the subject, nor have my own previous publications, or my own photographs and detail notes been used at all, excepting briefly. The cuts, excepting those showing the Hydrastis farm of Dr. Homsher, are from *Drugs and Medicines of North America,* 1884, or from others of my previous prints on the subject. The object being to present the problem so as to save to others experimental wanderings, I must yet urge the reader who proposes to enter the field of Hydrastis culture, to study carefully the Bulletins issued on this subject by the Agricultural Department of the United States Government, especially the admirable pamphlet of Miss Alice Henkel and G. Fred Klugh, of the *Bureau of Plant Industry.*—L.

being nearly the geographical center of its original commercial area. Pockets of it were also found in Southern Illinois, Southern Missouri, Northern Arkansas and Central and Western Tennessee, these sections occasionally yielding the drug in quantity sufficient for collection. It was scarce throughout most of Illinois, Northern Indiana, Southern Michigan, the Southern Peninsula of Ontario, Pennsylvania and Western New York, and was occasionally found near the base and along the ravines of the Allegheny Mountains. Its area of distribution in former years is illustrated by the accompanying map (Fig. 3), reduced from *Drugs and Medicines of North America,* 1884.

Fig. 1.
Hydrastis Fruit.
(One-fourth Size)

The natural location of Hydrastis is in rich, open woods, where leaf mold is abundant. Although easily cultivated (as shown hereafter), it has no power to adapt itself to destructive, altered natural conditions, being quickly exterminated by cultivation of the soil. Even cutting off the trees for woodland pastures, especially in clay soil, causes the wild plant to disappear in a few years. Its greatest enemy is grass sod, which smothers it from existence. The plant will, however, stand extremes of temperature, as is evidenced by its natural distribution. A small but very luxuriant garden bed of Hydrastis was shown me some years ago by a friend in Detroit, while in my own garden in Cincinnati it grew and throve in a glazed-over, grass-free bed, even though exposed to the blazing, direct rays of the sun.

COMMERCIAL HISTORY. In 1793, the American Philosophical Society published in its Transactions (p. 224), a paper by Mr. Hugh Martin, read before that society under the title, *"An Account of Some of the Principal Dyes Employed by the North American Indians."* In this we find the first reference to Hydrastis, Mr. Martin stating that the bright yellow dye of the Indians was obtained by the use of a plant that he said might well be called *"radix flava Americana."* Rafinesque, 1828, in his *Materia Medica,* devoted much space to the drug, while the early commentators on American medicinal plants slightingly mentioned it. The editor of the *Thomsonian Recorder,* 1833, added it to the Thomsonian materia medica, and Wooster Beach introduced it in his practice, but the drug was neglected by the first edition of the *United States Dispensatory,* 1833. The second edition, 1834, gave it a slighting reference, which was carried, unchanged, for ten years. *The Electic Dispensatory,* King and Newton, 1852, made Hydrastis conspicuous, and it thereafter became much employed, becoming official, in 1860, in the Pharmacopoeia of the United States.

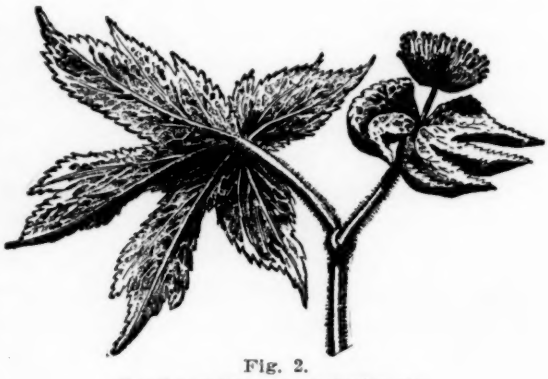

Fig. 2.
Leaf and Flower of Hydrastis.
(One-third Size)

During this entire period the drug was abundant, the price ranging from eight cents to twelve cents per pound. I knew of one lot of 15,000 pounds offered in Cincinnati about 1870, at eight cents a pound, but refused. However, even then, far seeing people perceived that the march of civilization must soon result in the extermination of this uuique and helpless American plant. In 1884, in *Drugs and Medicines of North America,* I called attention to the fact that, as a wild drug, Hydrastis must, within a reasonable time, become extinct, and I then not only took steps for self-protection, but advised parties concerned to prepare for the coming famine. Let me quote from the article cited:

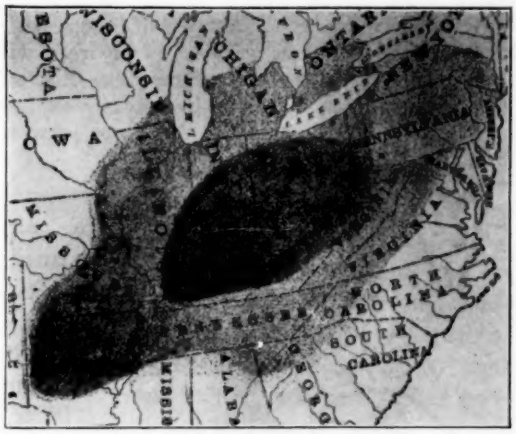

Fig. 3.

Map, showing natural distribution of Hydrastis in 1884. Drugs and Medicines of North America. The heavily-shaded portions indicate the territory in which Hydrastis was then abundant. The lighter-shaded portions indicate territory in which the drug was found, sometimes as an article of commerce. The unshaded portions indicate an absence of Hydrastis growth.

The Past and Present Supply.—Only a small area of country can yield the drug in amount sufficient to repay collection at present prices, and of this section of country, but a limited portion actually contributes any of it to the market. It does not necessarily follow, however, that the plant will not disappear in sections where it now grows abundantly, but which have never yielded the drug to commerce. Hydrastis is so sensitive to climatic influence that even a partial destruction of the timber causes it to shrink away, and one turn of the soil by the plow blots it from existence. If it were like Podopyllum, content to thrive in woodland pasture, the future would be brighter; as it is, each year witnesses a shrinkage in area and a loss to the world (without economic return), of this peculiarly interesting American plant. Hydrastis has nearly vanished from the rich hillsides bordering the Ohio river, and is no longer found in the populous sections of our valley. *Drugs and Medicines of North America,* 1884, page 93.

How well the prophecy then made has been fulfilled, is evidenced by the Hydrastis famine now prevailing among those who failed to read the lesson aright.

CONCERNING THE CULTIVATION OF HYDRASTIS. Contrary to the usual opinion, Hydrastis is easily cultivated, providing the soil be suitable, and the bed kept free from grass, which not only prevents its increase by the delicate adventitious buds on its slender roots, but even smothers the mother plants. For this reason, rather than from the absolute necessity of deep shade natural Hydrastis abounds in rich, soft, loamy woodlands, and consequently, artificial growing must, if success is to be hoped for, recognize these conditions. Scientific study and care in the artificial cultivation of the drug will unquestionably improve on natural methods, but nature is an excellent teacher. In this connection, the experiments of Dr. H. T. Grime, of New Carlisle, Indiana, are very interesting. He writes me, in substance, as follows, his letters bearing date of November 10, 1906, and May 1, 1908:

Cuttings in boxes five feet above the geenhouse floor, well mulched with rotted horse manure and sawdust, grew thriftily. In ordinary hothouse benches, the plants close together grew so fast as to exhaust the soil in one month. I never saw such rapid growth and such early maturity. I discarded wild soil, because of its contamination with insects, worms and other pests, snails being the worst, replacing same with artificial soil fertilized by henyard refuse, ashes, butcher-shop waste and bone manure. The cuttings started in the greenhouse were transferred to rows in this artificial garden, which was shaded by beans on poles with barrel slats overhead, as well as by fruit trees, with grapevines planted at frequent intervals. Occasionally the plants were sprayed by Bordeaux Mixture. The result proved that the Hydrastis grew rapidly and unfortunately exhausted the soil quickly, being in this respect *worse than tobacco.* Many of the leaves grew to the exceptional size of twelve inches in diameter.

CHARACTER OF THE RHIZOME. Fresh, full-grown, wild Hydrastis rhizome is from 1½ inches to 2 inches in length, and from ¼ inch to ¾ inch in diameter, usually subdividing if of 1½ inches in length. (Fig. 4.) It then not infrequently forms knotty clumps.

Fig. 4.
Rhizome of Hydrastis.
(One-half Size)

When dry, the diameter is from ⅛ inch to 1-3 inch. (Fig. 5.) The weight of the fresh rhizome, with attached roots, averages from 80 to 175 grains, but in drying it loses about two-thirds of its weight, or even more. After a growth of from four to six years, the rhizome gradually decays at the older extremity, while at the growing end it creeps through the earth, after the manner of Trillium. The older portions are inferior in quality, hence great age is not accompanied by a proportionate increase in size. Seventy prime, full-sized, green Hydrastis rhizomes (wild), gathered by me October 20, 1907, weighed eighteen ounces. Sixty, of inferior quality, weighed ten ounces.

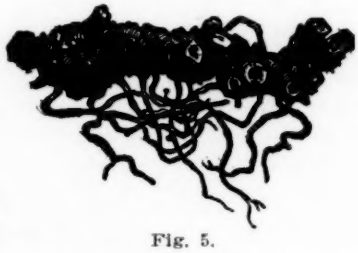

Fig. 5.

INCREASE BY ROOT BUDS. In studying natural clumps of Hydrastis in the woodlands, I was struck with the fact that the patches under the beech trees, where it luxuriated to best advantage, spread uniformly outward in the woodlands, creeping often to a considerable distance. Again, a parent stem would be surrounded with plants more or less developed, the sports sometimes reaching several feet from the parent stem. I was somewhat perplexed to account for this method of increase, because it surely had not come from the seed, which are very scarce in their natural condition, being enclosed in a small, red berry resembling a red raspberry that is greedily eaten by birds and squirrels. (Fig. 6.) Nor does the rhizome divide itself. But original experimentation in the Kentucky woodlands, as well as in our cold frames at home, demonstrated that some of the delicate root fibres, creeping close beneath the ground, threw up adventitious buds (Fig. 7),

Fig. 6.
Berry of Hydrastis
(Natural Size)

which became new plants from the decay of the connecting rootlet (Fig. 8). Some of these root fibres spread to a considerable length, often two or three feet, or more, following soil avenues of least resistance, frequently cast up more than one bud from the same rootlet (Fig. 9.) Creeping alongside decaying limbs and roots, even penetrating their substances, the natural plant bed thickens and spreads, regardless of the seed.

Fig. 7.
(A shows bud on rootlet)

These, however, when dropped by birds or otherwise scattered, serve as nuclei for new patches, but do not, in my opinion, materially account for the increase of old clumps. Indeed, though propagating by seed is possible in a home-made bed protected from birds and squirrels, I found it necessary, both in a natural woodland of large extent and in my exposed plant beds at home, to bag each clump of green berries, in order to secure seeds enough for experimentation.

INCREASE BY CUTTINGS. Every full-grown rhizome of Hydrastis is studded with rootlets and many undeveloped buds. As each eye of a potato will, under proper cultivation, make a plant, so each of these Hydrastis buds, provided there be a good root attached, will produce a Hydrastis plant. If a rhizome be sliced transversely into parts, each portion carrying its bud and a few fibrous roots, and these be planted a few inches apart, in rows, in shaded, grass-free beds, in moist soil fitted to its growth, most of the young plants are certain to make a thrifty start, unless an unfortunate drought prevails just after the setting (Fig. 10). Even here, the experience of Dr. Homsher shows that cuttings that have apparently succumbed to untoward conditions, may still be alive, throwing out root fibres and producing a strong underground bud the first season, to come up the second season as vigorous young plants. The rapid rate at which a Hydrastis bed may be increased by means of cuttings is indicated by the fact that the seventy old roots mentioned above yielded 345 eye-cuttings with rootlets, and forty

Fig. 8.
(Bud on rootlet, fully developed)

Fig. 9
(Young rhizome A, on rootlet, two buds (B and C) set on same rootlet. Rootlet shortened in cut from 18 inches long in order to show buds.)

eyes without fibres. The sixty inferior plants gathered at the same time, yielded 240 eye-cuttings, with rootlets, and seventy eyes without fibres. I have found it best to plant the cuttings an inch beneath the soil, a few inches apart, and thus allow them to remain for two years, when they should be transplanted into rows, or into beds of any shape or size designed for the purpose, it being better, however, that these should be patterned after the manner of flower beds, with walks between, so as to enable a person to reach the center, without stepping on the bed. One thousand cuttings potted in April, one each in a two-inch pot, the whole lot being set in the earth to form a solid bed in a shady ravine, developed nearly the entire setting. This plan, in my opinion, is the best method of starting a new bed. In five years the transplanted plants, six inches apart, in rows twelve inches apart, will be ready for gathering.

Fig. 10.
(Cutting of Hydrastis. Rhizome sending up stalk from eye.)

GATHERING THE CROP. The parent rhizome (four to six years old), after the leaf has withered but can still be located, should be lifted from the earth and three-fourths of it cut off, the growing end, carrying the terminal bud, being replaced in the earth, thus leaving in the bed a full-grown plant to continue the future. In addition, the small plants that have arisen from the rhizome can be removed to new localities, thus rapidly increasing the Hydrastis crop. The parent bed remains thus preserved in a luxuriant setting, the plants themselves, as well as the root buds, contributing to the increase. Had collectors of the natural drug adopted these precautions, the woodlands yet remaining in its native sections, would be studded with beds equal, if not superior, to the original supply. To illustrate the rapidity with which a Hydrastis crop can be produced under favorable circumstances, attention is called to the following letter from a successful grower of Hydrastis, in whose efforts I have been much interested. An eclectic physician, he naturally became concerned in the subject, and listening to my arguments some years ago to the effect that a Hydrastis famine was near at hand, began experimenting accordingly.* (Fig. 11.)

Fig. 11.
Showing woodland Hydrastis culture by Dr. G. W. Homsher, Camden, Ohio.

* Dr. Homsher was first more interested in *ginseng* than in *Hydrastis* cultivation.

CAMDEN, OHIO, December 1, 1911.

Friend John Uri Lloyd:

You asked me to write you briefly in regard to my experience in the cultivation of Hydrastis.

In the fall of 1903 I commenced the garden cultivation, planting under artificial shade, about 800 to 1000 roots. In 1907 I bought twenty-five acres of ideal woods, had my men cut and grub out the underbrush and prepared my beds, 4½ feet to 5 feet wide, the soil being rich and loamy. In the fall I transplanted all the stock from the garden to its native woods, thus going back to nature. During the year 1907 my men succeeded in gathering about 5000 wild plants, which I divided and planted, six inches each way, in rows. Every year since, I have added from 5000 to 8000 plants.

As regards cuttings, I will say that I find it is best to *break* (not cut) the roots, and to see that sufficient fiber roots are left with each piece of root. My cuttings are accomplished in September. The next spring, it may be that not more than half of the plants from these cuttings come up, but the *second* year, nine-tenths of these young plants send up a top. I have found cuttings to send out strong fiber roots during the summer and germinate a bud, *although no top appeared until the following year.* After the cuttings are placed, the beds should be well mulched with rotten wood or decayed leaves, not too heavy, about one and a half inches thick. (See photographs accompanying.) G. W. HOMSHER, M. D.

RECAPITULATION. Hydrastis Canadensis can be easily cultivated, and after the time necessary for the maturity of the beds, may prove a profitable investment, as well as a pleasant avocational side issue for doctors, druggists and others in rural sections.

The photographic views of the woodland beds of Dr. Homsher, together with his report, are fully comprehensive.

The investigations of Dr. Grime demonstrate:

1. That Hydrastis can be propagated by hothouse methods as a quick starter.
2. That the rhizomes, transferred to artificially enriched soil, in a garden shaded by bean and grape vines and a few trees, grew more rapidly than the wild plants.
3. That Hydrastis rapidly depletes the soil, even though it be very rich.

The difficulty at the present time lies in the fact that the natural drug has been exterminated from all sections of the country, thus preventing the obtaining of green plants for cuttings. Parties raising the drug are utilizing the increase thereof to enlarge their own beds. However, most druggists in the Central West can, in their own neighborhoods, obtain enough of the wild plants to make a start (a few plants will answer), and as has been shown by this article, under proper conditions and *care,* the increase will be rapid. A rich, loamy garden, shaded, will answer every purpose, but a deeply shaded natural woodland is ideal.

The greatest trouble with natural woodland cultivation comes from the poacher, who considers everything that grows in the woodlands free, and who loses no opportunity to encroach upon the property of his neighbors, this being particularly true at the present high price of Hydrastis.

Let me say in closing, that the exhorbitant price now demanded for Hydrastis is altogether owing to ordinary man's improvident disposition and destructive vandalism. The present scarcity is unnecessary, but promises to be cruelly lasting, there being seemingly little prospect of cultivated Hydrastis drifting into market in the very near future, in quantity sufficient to bring the price to a normal condition. Without a doubt, cultivated Hydrastis must command a good

commercial return, but prices that prevailed in the olden times, of eight or ten cents a pound, will never again be accomplished.

In this connection, I again plead for government and state intervention in such directions as this. If it is proper to preserve a lingering group of bison, or to search the land over for our vanished wild pigeon, why is it not proper to conserve, with the help of the strong hand of authority, America's valued flora from absolute extermination?

THE AMERICAN PHARMACEUTICAL ASSOCIATION—ITS ORIGIN, RESULTS AND POSSIBILITIES.

JOHN F. HANCOCK, PHAR. D.

History is supposed to be a narrative of facts and events, arranged in chronological order, with an explanation of causes and effects.

It may be that some of the members of the American Pharmaceutical Association are not familiar with the causes and influences that brought the Association into existence and have made it a factor in the aims of those who are loyal to the highest ideals in pharmacy.

It has an interesting history that pays compliment to its founders and supporters.

The birth of the American Medical Association, whose members were practically interested in pharmacy, exerted an influence for the betterment of pharmacy and made possible official co-operation.

These two branches of medicine have been, and will always be, independent, and they should be harmonious in the endeavor to bring about the rest results to both.

The American Medical Association was organized in 1847, and the American Pharmaceutical Association was organized in 1852. When the Medical Association came into existence, there were many medical colleges throughout the borders of its territory; when the Pharmaceutical Association was organized in 1852, there were within the limits of the United States, the Philadelphia, New York, Massachusetts, Maryland and Cincinnati Colleges of Pharmacy. These colleges, through their accredited delegates, were the active agents in perfecting the organization.

To revert to the primary object, it is necessary to make detailed statements of conditions then existing in the drug trade of the United States.

At this time, pharmacy was becoming more than ever a distinct and independent branch of medicine. Its commercial interest had become important and the colleges of pharmacy were educating students for a higher plane of usefulness.

In all the ages of the world, medicine, including its special branches of practice, has been, to a degree, in advance of the civilization of the times, and influenced by the advancement or retrogression of the learning and civilization of the ages.

It is doubtful that an unalterable science of medicine, or an unchangeable method of practice, will ever exist for a long period of time, but we may con-

gratulate ourselves in having advanced to a higher state of scientific and practical knowledge than has been known in the history of the past.

In the years since pharmacy, in the United States, has been detached from the office of the physician, marked improvements have been made in its practice and educational advantages have greatly increased.

One hundred years ago it was the custom of physicians in this country to compound and dispense prescriptions, and in many cases to make pharmaceutical preparations with the assistance of members of the family and servants, drawing their supply of crude drugs from the apothecary shops.

The "Bentztown Bard" gives a graphic word picture of the departure of the apothecary-physician, so genial and beloved by all the people of his day, when he was able to fully satisfy all the needs of medicine and pharmacy.

In the early years of the past century were found in the larger cities a few educated and well trained apothecaries, who came from the shops and schools of pharmacy in the old world, where law had provided the means of scientific and practical instruction. These men were recognized and encouraged by the best element of medical practice and soon became factors in building a strong foundation for pharmaceutical advancement in this country. All honor to these men, who made possible present conditions.

It must not be forgotten that the better class of physicians in the new world were glad to receive the assistance of qualified apothecaries, and in turn gave them every possible encouragement. From such influence the Philadelphia College of Pharmacy was suggested and brought into existence in 1821, and the first Journal of Pharmacy in 1829, both of which received valuable aid from physicians—the college with its faculty of physicians, and the Journal edited by a physician.

The success of this college and its Journal, with increasing strength and usefulness to the present, was an inspiration for the organization of colleges of pharmacy in other parts of the Union.

These two combined influences were the first step towards the organization of the American Pharmaceutical Association.

The college became interested in the condition of the drug market, and the Journal circulated the literature of pharmacy from all parts of the world.

The College of Pharmacy of New York was the next organization of pharmacists to give a helping hand. New York City, as a seaport and the metropolis of the nation, was the leading port of entry for foreign goods of all kinds, and largely so for drugs, and drug preparations soon became a point of interest because of the inferior quality of drugs imported into this country. The better class of physicians, pharmacists and druggists became mutually interested, and they found it necessary to seek the aid of the general government to protect the profession of medicine and the people from the abuses of corrupted commercialism in drugs, which abuses had been recorded in the American Journal of Pharmacy and in medical literature.

On the ninth of August, 1847, the New York College of Pharmacy held a special meeting to consider the best measures to prevent the introduction into the United States of sophisticated and misnamed chemical and pharmaceutical preparations.

Resolutions were adopted to call the attention of the Secretary of the Treasury to the fact that large quantities of spurious medicinal preparations were being introduced daily into this country, etc.

It was further resolved to invite the Philadelphia College of Pharmacy and other colleges of pharmacy and medicine to unite with them in presenting a memorial to Congress to devise means to suppress this most dangerous fraud, etc., etc.

In presenting a few of the many facts, the statement was made that bromide of potassium was imported and sold for iodide, some parcels being mixtures and others entirely bromide. The iodide was also frequently adulterated with large proportions of other salts. Many other cases were reported.

At a special meeting of the Philadelphia College of Pharmacy, November 1, 1847, a similar petition or memorial was sent to Congress, naming the many abuses, like those named by the New York College.

It was also resolved to send copies of the memorial that was adopted to the various colleges of medicine and pharmacy in the United States and request their co-operation.

On June 26, 1848, an "Act to prevent the importation of adulterated and spurious drugs and medicines" was approved by the President and became a law for the protection of the citizens of the United States, and a circular to that effect with instructions to the collectors and other officers of the customs was issued by authority of the treasury department.

But it was found that for some reason the object sought was not obtained in all cases.

There was need of a tariff standard for the guidance of drug examiners under the law, therefore further action was required by those directly interested.

The New York College of Pharmacy again became active. The board of trustees appointed a committee to investigate conditions.

The investigation suggested co-operation of all allied organizations, resulting in invitations being sent to the colleges of pharmacy of Boston, Philadelphia, Baltimore and Cincinnati, to send delegates to a convention to meet in New York City on the twenty-fourth of April, 1851, for the purpose of considering the importance of recommending standards for the use of drug inspectors, which it was proposed to bring before the third annual meeting of the American Medical Association, to meet at Charleston, S. C., on the sixth of May.

By resolution of the New York College, the report was committed to a delegation, and Dr. C. B. Guthrie was appointed to present it. But the Association, while in favor of such a tariff standard, regarded the hastily prepared report as being incomplete, and for that reason it was laid on the table.

The convention of colleges of pharmacy and others interested, after organization and transaction of important business, adjourned to meet in Philadelphia in 1852.

The convention of colleges of pharmacy, held at 511 Broadway, New York, on the fifteenth of October, 1851, will ever be an illuminated chapter in the history of American pharmacy. It was the culmination of important events and the beginning of a great career in organized pharmacy in America.

The convention was hastily called—not giving sufficient time to many who would have been present had time permitted.

On the register of that national pharmactutical convention are names that will always be remembered with reverence and respect. Those men had the keenest conception of pharmaceutical honesty and honor.

While the subject of standards for importations was under consideration, the pharmacists of the United States who were interested in the pharmacopoeal convention to revise and publish another Pharmacopoea, rendered all the assistance in their power to make the work successful. The men of the convention were pioneers in the cause of pharmaceutical progress and improvements, and had many more difficulties to contend with than is experienced by pharmacists at the present time; but they were able to establish a strong foundation and to pave the way for continued advancement. While our government has not exacted the uniformly high standards of European governments for the practice of pharmacy, individual ability may be found here equal to the most exacting demands of the governments of the Old World. No country has made greater advancement in a given time and none has greater promise for future development.

The convention of 1851 adopted a series of standards and rules for the examiners of drugs at each port of entry, and by resolution, the delegates of the New York College of Pharmacy were directed to present the published proceedings of the convention to the Secretary of the Treasury for his consideration.

The following were also discussed and adopted, viz:

"WHEREAS, To secure the full benefits of the prohibition of sophisticated drugs and chemicals from abroad, it is necessary to prevent home adulteration,

"Resolved, That this convention recommend to the several colleges to adopt such measures as in their respective states may be best calculated to secure that object."

The convention adjourned to meet in the city of Philadelphia, on Wednesday, October 6, 1852.

The President of the Convention, Dr. C. B. Guthrie, of New York, on taking his seat to preside over its deliberations, extended thanks for the honor of being called to preside over the first convention of the kind ever assembled in the United States.

On the sixth of October, 1852, at 4 p. m., the adjourned convention assembled in the hall of the Philadelphia College of Pharmacy, on Zane street. At this meeting delegates attended from the following organizations:

The Massachusetts College of Pharmacy.

The New York College of Pharmacy.

The Richmond, Va., Pharmaceutical Society.

The Cincinnati College of Pharmacy.

The Philadelphia College of Pharmacy.

The Maryland College of Pharmacy.

Reports of the meeting in New York were received and acted upon, resolutions adopted and new officers elected and business in regular order was dispatched.

The business committee reported the draft of a Constitution, which was debated, amended and adopted. It was at this meeting the name was changed

from National Association to its present title, "The American Pharmaceutical Association."

Under this broad and comprehensive name may we wish it a long and useful life, waxing stronger as the years multiply.

In the year of its permanent organization and the subsequent years of its infancy and youth, it was nurtured by those who had the strength and will of earnest manhood. Now that it has grown to maturity it stands a power of usefulness significant of the best there is in pharmaceutical organization. What is needed now is the loyal support of its membership. If its members continue to be as true to its aim and purpose as were those who have passed away, no one may need to blush for its character and reputation. It would be needless to relate in detail what it has done for those most interested in pharmaceutical progress. Those who wish to know more of its history than has been revealed through its published annual proceedings, should attend its annual meetings and see those men who stand for what is best for pharmacy, giving their time and earnest work from one meeting to another. Those who attend the annual meetings and read the published proceedings must realize that the united efforts of the higher type of men in pharmacy are exerting a good and useful influence in a department of science that should appeal to the better nature of man.

The report on the progress of pharmacy will more than compensate the practical pharmacist, who pays his annual dues to the Association.

What has been accomplished for the benefit of pharmacy, pharmacists and druggists, by the active membership of the Association must indicate the promise for the future.

In pharmacy and its collateral branches of commercialism, changes must come, relative to the changes that come in all branches of industry. The older members of the fraternity have witnessed the changes that have come to pass in the last fifty years—some for better, some for worse. Those on the Watch Tower should carefully observe and endeavor to ward off the evil and invite the good; for pharmacy should be considered in a practical sense as largely humanitarian, be it professional or commercial. There is no reason why commercialism should not be as honest and respectable as professionalism can possibly be. One term does not signify honesty and competency more than the other.

Therefore, to judge the future by the past, we may be hopeful that in this age of higher scientific knowledge and industrial development, the future of the American Pharmaceutical Association gives greater promise than has been possible in the past.

But in the roll of its honored members, when calm judgment shall have estimated the difficulties and disadvantages of the past in comparison with the present developments and advantages, and the anticipated increase of opportunity in the future, we should not indulge a less regard and esteem for the strong men who stood in the front ranks and bore with fortitude their heavy burdens. Their individuality, perhaps, was made strong by stern difficulties, and all the more invite our admiration and applause.

Without disparagement of any one of those who were present and assisted in organizing the American Pharmaceutical Association, the name of one who contributed largely to effect the organization may with propriety be mentioned at

this time, the name of William Procter, Jr., the Father of American Pharmacy—the one single individual who did more substantial work for the betterment of pharmacy in America than any other individual member of the fraternity.

For years before the organization, he had been quietly but earnestly at work with the preliminary elements of the Association. In 1831, he began his apprenticeship in the study of pharmacy. From the time of his graduation to the year of his death, he regularly contributed valuable papers published in the American Journal of Pharmacy. In 1841, he was appointed secretary to the committee on revision of the U. S. Pharmacopoea. In 1844, he opened a pharmacy at the southwest corner of Ninth and Lombard streets, which continued under his ownership and management to the time of his death. In 1846 he was elected Professor of Pharmacy in his alma mater, the first pharmacist to hold a professorship in the oldest college of pharmacy in America.

In 1846 he assisted Prof. Joseph Carson as co-editor of the American Journal of Pharmacy. In 1850 Prof. Carson resigned, and Prof. Procter succeeded him in editorial management of the Journal. A reference to the Journal and the proceedings of the American Pharmaceutical Association will demonstrate the value of his life to pharmacy.

THE MANUFACTURE OF GALENICALS BY THE RETAIL PHARMACIST.

Its Possibilities and Limitations.

HENRY C. BLAIR.

Pharmacy, according to Professor Remington, is the science which treats of medicinal substances, and comprehends not only a knowledge of medicines and the arts of preparing and dispensing them, but also their identification, selection, preservation, combination and analysis.

Accepting this as a correct definition, it follows that a pharmacist is one who knows theoretically and practically these arts.

It does not follow that he must practice these arts, or all of them, in the case of every medicinal substance that he uses in his business, though this seems to be the opinion of some writers.

On the other hand, a man who works in a drug store and who does not practice the arts of the profession can not be considered a pharmacist.

Where, then, shall the line be drawn? In order to serve the public properly, to derive from his business the largest return, and to practice pharmacy as a profession, the following rule in relation to galencials will serve as a guide to the conscientious pharmacist:

Manufacture all galenicals unless they can be procured of a better quality than you can make or unless they can be purchased for a less price than they cost you to make, quality being equal.

The retail pharmacist should make the following galenicals because he can

do so just as well as the large manufacturer and at a much lower price than he must pay anyone else:

Waters, solutions, syrups, honeys, mucilages, emulsions, mixtures, glycerites, spirits, elixirs, collodions, liniments, infusions, decoctions, most tinctures, wines, vinegars, powders, triturations, masses, confections, pills, troches, cerates, essences, ointments, hypodermic tablets, compressed tablets, and filled capsules.

Of course, there are exceptions in each of these classes.

In the waters, we except rose, orange flower and cherry laurel for these can be made where the flowers can be procured in a fresh condition of a better quality than those made in any other way.

In the solutions, nitroglycerin for obvious reasons.

In the spirits, frumenti for government reasons. Likewise, wines.

Gelatin, sugar, and chocolate coated pills cannot be made on a commercial basis by the retail pharmacist, and in the opinion of the writer no physician who gives his patient proper advice will order these except in rare instances, where the medicine is extremely disagreeable, or for some other equally good reason.

Every pharmacist should have a machine for making compressed tablets. Any ordinary medicine ordered in a tablet may be made by a hand machine in a few minutes, and while the expense, in time, may be much greater than the cost of a ready-made tablet, the freshness of the medicines and softness of the tablet (less compression) will be sufficient to warrant the proceeding, and when the doctor and patient know that this is the practice, remuneration without objection will follow.

In the writer's opinion, compressed tablets are the poorest form of administering medicines.

For about two dollars a mould for making tablet triturates can be purchased; it requires only about fifteen minutes to make one hundred triturates. These are much more soluble than compressed tablets.

When business is slack, triturates can be made up for stock (such as will not deteriorate by keeping), and special formulae on prescription can be made so quickly that pharmacists should be prepared to do this work and so notify their physician friends.

The cost is considerably less than that charged by manufacturers.

Plasters, except the ready-made kind, are used but seldom. This is largely due to the fact that physicians do not know or have forgotten that a pharmacist can make plasters. For many purposes and for many reasons, specially prepared plasters are far superior to the factory-made ones, and if the matter is properly brought to the attention of the medical profession, they will again come into use.

It will be noticed that extracts, powdered, solid and fluid, are not mentioned in the foregoing list of galenicals. The reasons follow:

The average retail pharmacist uses a great many extracts, but comparatively little of any one. Unless he can use a large amount of any one the cost of making will be from two to ten times the price he must pay a manufacturer for them.

Unless he has apparatus and facilities, which include a vacuum pan and condenser, he cannot make them of as good quality as the large manufacturer.

The writer does not know of any retail pharmacist having a vacuum pan.

Therefore, these extracts are left out of the list of galenicals that a pharmacist should make.

Exceptions also must be made to the following tinctures: Aconite, belladonna, hyoscyamus, physostigma, stramonium and possibly cinchona, nux vomica and opium.

Unless a retail pharmacist uses large amounts of these and becomes expert enough to properly and accurately assay them, it does not pay, either financially or morally, to make them.

His cost of assaying makes them come to a much higher figure than that charged by the large manufacturer; and the writer has yet to see the active retail pharmacist who can afford time from his other work to make an assay every time it is required; the result being that this work must be left to an employe, possibly a college student, who can not be expert enough to be relied upon. On the other hand a reliable and trustworthy manufacturer employs expert chemists who are making assays every day and who become so expert that there is never and doubt as to their findings. In fact, most reliable houses make a number of assays of each lot of product, and these must correspond, thereby establishing beyond a doubt the exact strength.

Our state and federal laws require these tinctures to conform to the U. S. P. and, even if manufacturers were inclined to be dishonest, the chances are that they would not jeopardize their business by sending out unassayed tinctures.

There is no reason why a pharmacist should not purchase these preparations, any more than there is a reason why he should make his own chemicals, such as hyoscine, digitalin, iodoform, phosphorous or carbon bisulphide.

Certainly he should know how to make them and assay them, just as he should know how chemicals are made and tested, but when the cost of production and the end results are considered, it would be absurd, from a business point of view, for him to do so. If a retail pharmacist purchases his extracts or tinctures from another manufacturer he should assure himself that the manufacturer employes first-class chemists—then he should occasionally make tests or assays to see that he is getting standard preparations. If he finds that he is not, he should notify the manufacturer, who should replace the article complained of with first-class goods and pay all expenses, including costs of testing. Otherwise, the retailer should notify the state and federal authorities and sue for damages. One or two cases of this kind would be of signal benefit to the public.

Reputable manufacturers are always glad to have their attention called to their goods in case of a mistake or of an article found to be inferior, and to "make good" if they can do so.

Recently when a manufacturer sold to the writer an enzyme preparation, for which no test is given in any text book, but which did not respond to the test applied as it should have done, the manufacturer supplied a new lot at no cost to the writer, even though the test used was not that in use in the manufacturer's laboratory.

The galenical part of our business is not different from the drug or chemical part; we are advised by some writers that unless a man makes all his own galencials, including extracts, he is no pharmacist, yet these same men ignore the chemical issue. Is there anyone so foolish as to think that a pharmacist

should make his own chemicals? Is it not just as ridiculous to expect the retailer to make galenicals that require even more complicated and expensive apparatus and more accurate manipulations?

When the question of assay enters into the value of a galenical, is it not better to rely on the expert chemists than to risk the health and even lives of the public by attempting to apply that part of our theoretic knowledge which is so little used that we cannot become expert?

We believe the answers to these questions by practicing pharmacists can be only in the affirmative. If a galenical requires apparatus for making or facilities for assaying or testing that are beyond the reach of the pharmacist, he is justified in purchasing such galenicals from the large manufacturer just as he purchases the alkaloids, and other chemicals.

THE PHYSICIAN AND THE PHARMACIST.*

W. A. PUCKNER.

Physicians need pharmaceutical advisers—those whom they may consult concerning desirable methods of preparing medicines for administration, their incompatibilities and similar questions, upon which it is difficult for physicians to keep posted. During recent years many physicians have been inclined to forsake their corner druggist, because he has been tried and too often found wanting, and have pinned their faith to pharmaceutical manufacturers and promoters of specialties and their detail men. Dependence on the specialty proprietors has, however, been disastrous—so disastrous that well informed physicians will have no more of the detail men.

The recent reports of Council on Pharmacy and Chemistry of the American Medical Association and of the Association's chemical laboratory demonstrate amply that entire dependence cannot be placed on manufacturing pharmacists and their endless assortments of ready-made tablets, elixirs and syrups.

While it has not been the aim of the American Medical Association in its propaganda for honest medicines to specially favor the retail pharmacist and to work in his interests, its publications are such that the retail pharmacist could use a large part of them as arguments that he deserves the confidence of the practicing physician. The recent reports from the Association's chemical laboratory giving the results of examinations of tablets of bismuth, phenol and opium and of certain compound digestive tablets might well be used by the pharmacist as an argument to physicians, that instead of using the thousand and one ready made tablets offered by manufacturers, it would be to the advantage of the physician as well as the patient if, instead, he would prescribe remedies to be put up by the pharmacist. Again, the reasons given by the Council on Pharmacy and Chemistry for not recognizing the chemical substance, quinine arsenate, can be used by the pharmacist as another argument why the physician should write prescriptions. Quinine arsenate, it should be stated, was rejected

*Read at the Meeting of the City of Washington Branch, December 20, 1911.

by the Council because it was held that this compound containing both quinine and arsenic was such that it could not be used in quantity to get an efficient dose of quinine without getting too much arsenic, or if used for its arsenic value, its quinine content was too small to be of any use. Instead, it was suggested that physicians had better combine quinine and arsenic in their prescriptions in the quantities that are adapted to the needs of the individual patients. While quinine arsenate is a definite chemical substance the arguments given against its use will apply to most proprietary mixtures. As another illustration of the possibilities which lie before pharmacists, a recent discussion in the *Journal* of the American Medical Association regarding the investigation of Ergot preparations carried out by Edmunds and Hale in the Hygienic Laboratory of the United States Public Health and Marine Hospital Service may be taken. This examination showed in the first place that the proprietary preparations of Ergot claimed to be wonderfully reliable, potent and permanent, possessed none of these qualities. The examination further showed that fluidextracts made by different firms, although claimed to have been standardized physiologically, on the other hand did not compare favorably with a fluidextract made in a small way by the authors. It is interesting to note that the *Journal* of the American Medical Association in commenting on this work editorially, suggested that

"Such results suggest that a reliable pharmacist following the official method may be able to supply the physician with as good preparations as the large manufacturing houses, or even better."

In other words, the editor evidently believes that the time when the pharmacist might with advantage make his own fluidextracts has not passed, even in the case of such a drug as Ergot.

Happily, there are signs that pharmacists are awake to the tendency of the times and are making efforts to devote more attention to the professional side of their profession; and, as a result, there is a tendency on the part of physicians to go back to the old times, and once more get in touch with their druggist. The pharmacist, however, must realize that physicians need *real pharmacists* as advisers and not druggists, who, while prominent at "get-together dinners" with talk of U. S. P. and N. F. Propaganda, neglect their prescription counters to prepare grewsome "patent medicine" displays and advertising dodges in their front windows.

An illustration that pharmacists do not always appreciate the needs and demands of physicians was given some time ago by an editorial discussion in a drug journal in which was lauded as a shining light, one of the class of druggists who would "work" the doctor as did the detail men in the past. This drug seller decorated his front window with a sign which read:

"IF YOU HAVE NO FAMILY PHYSICIAN,
LET US RECOMMEND ONE."

To supply the desired name of the proposed physician to the unwary passer-by who might be attracted by the sign, this seller of drugs placed the name of all doctors in his neighborhood on cards, shuffled them and then "dealt," so to say, "from the top of the deck," when his advice was asked. The drug journal says:

"The list of doctors in the store includes about a score of names and addresses

of efficient physicians residing in the vicinity of the store, and, in recommending them, a system of rotation and alternation is employed. Having recommended one doctor, the clerk crosses off that physician's name, and when the next request for a good physician is made, he selects the doctor whose name appears next on the list."

It appears that the drug seller feels proud of his Paris-like judgment and the drug journal apparently believed that physicians were devoutly thankful for the recommendation thus given. This much may be said of this seller of drugs: His advice is on a par with that which he gives when he recommends a "patent medicine," the composition of which he is ignorant, for a disease that he does not understand.

The plan proposed by this druggist is, of course, an insult to the medical profession, and it is evident that this has been generally appreciated, for the scheme does not appear to have found favor.

I am convinced that physicians fully appreciate the help which pharmacists can give them, and it only remains for the individual pharmacist to go to the individual physician and demonstrate that he is the one that may be relied on. This plan of procedure, I am sure, promises much good both for the pharmacist and the physician, and is my excuse for presenting this thought at this time.

PHYSICAL CONSTANTS OF THE U. S. P.*

G. H. MEEKER, PH. D., LL. D.

The historical and other introductory matter of the eighth revision of the U. S. P., together with the current federal and state pure food and drug legislation and the miscellaneous evidences of collaboration between the federal government and the revision committee, permit us to perceive how the pharmacopoeia has grown from the modest empiric beginning of 1820, then representing the more progressive pharmacologists of the Atlantic seaboard states, to its present position as the official scientific definer of the drug standards for the whole American public.

The present Pharmacopoeia bears internal evidence that the revision committee has spared no pains in endeavoring to produce scientific accuracy throughout; yet improvements can be, and no doubt will be, made in the ninth revision. It is the purpose of the present paper to point out certain important general improvements and some minor specific improvements which, in the author's opinion, should be made with reference to the physico-chemic data of the ninth revision as compared with the eighth revision.

A treatment of the subject, "The Physical Constants of the U. S. P.," would directly or indirectly require the consideration of:

1. The fundamental unit of length.
2. The fundamental unit of mass.
3. Other units related to 1 and 2—especially of volume and mass.

---

*(Prepared at request of the Scientific Section of the Philadelphia Branch A. Ph. A., and read before that body December 5, 1911.)

4. The standard scale of temperature.
5. Normal temperature and pressure.
6. Official temperature and pressure.
7. The crith.
8. The official coefficient of thermal expansion of gases.
9. Official specific gravity.
10. The density of water at 25° C.
11. The table of relative atomic masses.
12. The official data for solubilities.
13. The official data for melting points.
14. The official data for boiling points.
15. The official data for optical rotatory power.
16. Data for weights in vacuo.
17. Water of crystallization.
18. Normal "air-dry" moisture.
19. Chemic formulae—especially structural.
20. The certification of weights, volume measures, thermometers and polarimeters.
21. Recalculation of stoichiometric data for preparations and assays.
22. Methods for fixing the exact strengths of volumetric solutions, especially alkalies and acids.
23. Miscellaneous topics, such as normal impurities in vegetable oils, iodine number, saponification value, etc.
24. Methods for making determinations of temperature, melting point (or freezing point), boiling point and optical rotatory power.
25. Improvement and amplification of the tables of the Pharmacopoeia.

The labor involved in a thorough examination into all of the points concerned in the foregoing tabulation is so great that for the purposes of this paper it has not been attempted. However, a painstaking examination of the U. S. P., combined with the lessons taught by experience with the Pharmacopoeia in its treat ment of the points at issue, carries the conviction that on the whole the physicochemic data of the U. S. P. are satisfactory in scope and trustworthy in accuracy. Nevertheless, one can observe shortcomings; and some of these are noted below.

I. IMPORTANT IMPROVEMENTS.

Needed reforms in the premises may be tabulated and discussed as follows:

(a) The complete and unequivocal adoption of the principle that the standards of the United States Bureau of Standards shall be, in so far as they are applicable, the official standards of the U. S. Pharmacopoeia; and that all sets of weights, volume measures, thermometers and polarimetric apparatus authorized by the U. S. Pharmacopoeia shall only be official when they have been certified by the U. S. Bureau of Standards.

(b) The eighth revision is particularly delinquent in the looseness of its provisions for temperature measurements. Anyone who has had to do with temperature measurements knows how easily these measures may go astray; and since the determinations of melting points, specific gravities, etc., are exceedingly important provisions of the Pharmacopoeia, the question of temperature should be

handled in a strictly scientific manner. We find the following definition of temperature on page LIII of the Pharmacopoeia:

"When there is occasion to indicate the degree of temperature, the scale of the centigrade mercurial thermometer, or in its absence that of Fahrenheit's thermometer, is employed.

The Bureau of Standards (see bulletin of the Bureau of Standards, Vol. III, 663 et seq., 1907), has the following to say concerning the definition of temperature:

Resolution of the International Committee on Weights and Measures, adopted October 15, 1887:

"The International Committee on Weights and Measures adopts as the standard thermometric scale for the international service of weights and measures, the centigrade scale of the hydrogen thermometer, having as fixed points the temperature of melting ice (0°) and of the vapor of distilled water boiling (100°) at standard atmospheric pressure, the hydrogen being taken at an initial thermometric pressure of one meter of mercury—that is to say, 1000 : 760=1.3158 times the standard atmospheric pressure."

The scale adopted in this resolution refers to the scale defined by a certain standard hydrogen gas thermometer in the possession of the International Bureau of Weights and Measures at Sevres. This scale was compared with the scale defined by certain mercurial thermometers of French hard glass (verre dur), eight of which were sent to the United States to accompany the American prototype kilograms and meters. The scale defined by a mercurial thermometer is the temperature found after correcting the observed readings for various sources of error inherent in the mercurial thermometer. The values of these corrections have been accurately determined for the above standard mercurial thermometers of the United States Bureau of Standards, which thus serve as the working standards of the United States for fixing temperatures on the international hydrogen scale.

It is recommended that the revision committee employ the above definition for temperature, and avail themselves freely of the information contained in Circular No. 8 of the U. S. Bureau of Standards.

(c) Since the determination of melting points, boiling points, temperatures generally, and optical rotatory power are so important in the Pharmacopoeia, it is believed that the Pharmacopoeia should state official methods for making these observations. Everyone who has had to do with these tests knows the great desirability of specified procedure in the premises.

(d) The Pharmacopoeia should follow the custom universally adopted in scientific publications by citations of the original sources for its data. This necessity cannot be too strongly urged. If one examines physico-chemic tables such as the Smithsonian and those of Landolt, Castell-Evans and Beilstein, and the many tables as well as the original papers of investigators scattered through the various journals, one is impressed by the variation in the values given for melting points, solubilities and optical rotatory power. While it is believed that throughout the Pharmacopoeia authorities should be stated for all of the data included—with respect to melting points, boiling points, solubilities and optical rotatory power, it would appear to be particularly necessary for the Pharma-

copoeia to state the authority which it has accepted for each of its stated values. Melting and boiling points and optical rotatory power being particularly relied upon as tests for purity and identity of various substances of the Pharmacopoeia, it is only just and proper that an intelligent profession should not be compelled blindly to accept the present arbitrarily stated values. The remarks which have been made upon the subject of melting points, boiling points, solubilities and optical rotatory power apply also to miscellaneous special data such as physicochemic constants of oils and other semi-controversial matters.

Obviously the purity rubric plays an important role here; and it is suggested that two sets of data should be given—one pertaining to the pure substance, and the other showing the permissible limits of the physical constants. The eighth revision appears to have at times stated melting and boiling points applicable to the pure substances only, whereas intending (as the purity rubric shows) to permit tolerable impurity. The intent of the Pharmacopoeia is thus brought into conflict with its provisions. It is here further suggested that freezing points might often be substituted for melting points with great advantage. This is already done in the eighth revision in the case of Phenol.

II. MINOR IMPROVEMENTS.

(e) With respect to the fundamental unit of length, the statement on page LIV of the Pharmacopœia that "the value of the United States National Prototype Standard Meter is identical with that of the International Standard Meter derived from the Métre des Archives" is not strictly accurate. In the first place, the inference would be drawn that there is but one United States National Prototype Standard Meter; whereas, of the prototype meters which were distributed to the governments contributing to the International Bureau of Weights and Measures, the United States received Nos. 27 and 21. No. 27 was the first received, and is the one which has been in actual use by the United States Government—No. 21 being held as a reserve. When the group of International Prototype Meters were prepared, the International Bureau selected No. 26 as being most nearly identical with the Métre des Archives from which all of the prototype standards were derived; and this No. 26 is preserved at Sévres as the real international standard meter. When compared in 1888 with the United States Prototype Standards Nos. 27 and 21, the value of No. 27 was given as 1 m.—1.55 microns @0°C.

About 1904 the United States Government made a recomparison of No. 27 with No. 26, and the value then determined was 1 m.—2.00 microns @0°C. However, the 1888 value has been retained as the official value of United States Prototype Standard Meter No. 27, and the Pharmacopoeia should so state.

On April 5, 1893, by executive action, the international meter and kilogram were declared the fundamental standards of length and mass for the United States for both metric and customary weights and measures; and the official relationship then established between the yard and meter is as stated on page LIV of the U. S. Pharmacopoeia. On this page the Pharmacopoeia says, rather loosely, concerning the kilogram that "the United States National Prototype Kilogram, like the International Standard Kilogram, is derived from the Kilogramme des Archives." The complete statement would be that the United States is in possession of Nos. 20 and 4 International Prototype Standard Kilograms.

Of these two No. 20 has not been used, No. 4 being the active standard. No. 4 is not exactly 1 kilogram, but is 1 kg.—0.75 mg. The publications of the United States Bureau of Standards give as the relationship between the pound avoirdupois and the kilogram, the following:

1 lb. avoirdupois=0.453592477 kg.

which would seem to be a better method of statement than that employed in the Pharmacopoeia, viz., 700000000/1543235639 kilogramme.

Authoritative information on the above points concerning the fundamental standards of length and mass are to be found in the publications of the United States Bureau of Standards, but particularly in the Bulletin of Standards, Vol. 1, page 19 et seq., 1904, and in Circulars Nos. 1 and 17 of the Bureau of Standards.

(f) Under the topic of Gasometric Estimations, in the Pharmacopoeia, certain official values should be stated. Normal temperature and pressure should be clearly defined, and an official value for the crith should be stated, so as to relieve the ambiguities which now exist in this portion of the Pharmacopoeia. Also at any portion of the Pharmacopoeia where gas calculations are involved in the assays, the factors employed should be clearly specified. To illustrate the present ambiguity of the pharmacopoeial gas calculations, it may be mentioned that under assay of solution of hydrogen dioxide the calculations concerning the volumes of available oxygen is made really at normal temperature and pressure and not at the official pharmacopoeial temperature, 25° C. This truth, however, only appears by inference when one checks the calculation. Furthermore, in the calculations upon the assay of spirit of nitrous ether, one does not find, except inferentially, any statement for the value of the crith. It is believed that the Pharmacopoeia should adopt for the value of the crith 9/100 of a gram, which is not only a convenient value, but also the value accepted by the Smithsonian Institution (see page 89 of Smithsonian Physical Tables, 3d edition). It is further recommended that in general, when the Bureau of Standards has no official data, the Smithsonian data shall be the guide in determining the official pharmacopoeiai data. In this connection, since there is so much doubt as to the exact value to be assigned to the coefficient of thermal expansion of gases, it is suggested that the most convenient official coefficient would be .00367 for each degree centigrade, unless it be desired to state a special coefficient for each kind of gas upon which pharmacopoial calculations are made.

(g) In so far as we have examined those calculations of the Pharmacopoeia involving the determination of mass from stated volumes and specific gravity, the loose assumption is made that the pharmacopoeial specific gravity gives the mass of 1 cc. of the official liquid. The Pharmacopoeia should state a rule for determining mass in this connection, which rule should be based upon the statement that 1 cc. of water at 25° C has a mass of .997 grams. (See Smithsonian Physical Tables, 3rd edition, page 92.) The rule would read substantially, "The mass, in grams, of 1 cc. of any pharmacopoeial liquid is found by multiplying the officially stated specific gravity by .997." Perhaps it would be wise to add a table of masses of unit volumes of official liquids.

(h) With regard to the vexed question of the values to be assigned in a table of atomic masses of the elements, it is believed that a table based upon oxygen=16

would be much more convenient than the present table in the Pharmacopoia, and that the Pharmacopoeia should further declare that the official table of atomic masses shall be the last revised table issued by the International Committee on Atomic Weights. So much time elapses between the successive issues of the Pharmacopoeia that noticeable changes may have occurred in the table of atomic masses; and thus, in 1912 we still find ourselves using the table adopted by the International Committee for 1904.

(i) Rarely one finds discrepancies in statements concerning water of crystallization. For example, one may note the various statements encountered in the Pharmacopoeia with respect to the water of crystallization in mercurous nitrate (pages 530 and 589).

(j) From the introductory remarks of the Pharmacopoeia one can infer that of the tolerated innocuous impurities permitted under the various purity rubrics, unless otherwise stated the impurity is taken to be moisture. This, however, is inferential, and the pharmacopoeial statements should be everywhere explicit rather than implicit. It would be an excellent thing if the next revision of the Pharmacopoeia included explicit statements wherever necessary concerning what is considered to be the normal amount of moisture in the respective "air-dry" substances.

(k) Referring to the stoichiometric data underlying the various assays and preparations of the Pharmacopoeia, one occasionally meets with slight inaccuracies or inconsistencies, and it would seem as if this work should all be reparcelled out for recalculation.

(l) The pharmacopoeial methods for adjusting the strengths of volumetric solutions of acids and alkalies appear to be too narrow. Everything is functioned upon the preparation of normal potassium hydroxide solution against purified cream of tartar as a standard substance. This is indeed an excellent method; but it is faulty in that there is no safe check upon the purity of the potassium bitartrate—and, aside from this, any error made in adjusting the normal potassium hydroxide would be perpetuated throughout the series of alkalies and acids. It would appear that a much safer procedure would be to have each alkali and acid made *directly* and *independently*—using for alkalies pure potassium bitartrate and pure potassium tetroxalate as standard substances mutually checking each other, and for acids pure sodium carbonate and colorless, transparent Iceland spar as standard substances; and having in addition the cross-check between the acids and alkalies thus independently prepared. In this way faults in one standard substance would be detected through lack of agreement with the other standard substances; and each standard solution being made independently of the other, manipulative errors in the preparation of one would not be perpetuated through the series. For the standardization of $N/_{10}$ $KMnO_4$ the pure sodium oxalate to be furnished by the U. S. Bureau of Standards (see Bureau Circular No. 26, p. 8) would appear to be the most advantageous standard substance. Pure arsenous oxide is recommended as the standard substance for testing volumetric iodine solutions.

(m) Regarding the question of improvement and amplification of the tables of the Pharmacopoeia, reference should be given to the original sources from which the tables were derived. In the alcohol table a very useful addition would be a

column showing the "proof" of the spirit. Since in the commercial world from which the pharmacist obtains his alcohol the traffic is conducted on the basis of the "proof," it would seem very desirable for the pharmacopoeial alcohol table to contain such a column.

In conclusion it may be said that the foregoing discussion makes no pretense of being complete; but it is hoped that it contains timely suggestions which may prove of value.

MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA.

IS THE PHARMACIST EQUAL TO THE DEMANDS OF THE AGE?

"Another development of pharmaceutic demand is well illustrated by salvarsan. This is the year 1911. More is required of almost every profession and trade in this year than in 1811, vastly more than in 1711. It ought to be possible to send a prescription for salvarsan, ready for use, to any drug store, in 1911, with the same confidence of its prompt and proper preparation, as for laudanum in 1811. Einhorn's heads and packets for intestinal tests belong in the same category. Salol and keratin coated pills are another example. Suppositories and bougies of gelatin, cocoa butter, etc., are another. The fact that expensive and troublesome apparatus for preparing salvarsan are advertised in medical journals to physicians shows that the pharmacist is blinding his eyes to a proper and ultimately profitable extension of his scope.

"The words pharmacist and chemist used to be almost synonymous. Can the physician telephone to his druggist for a deci-normal solution of sodium hydrate, or a 1 per cent solution of a reagent or drug for local use, and be sure of accuracy? Some time ago, we wrote a prescription for a certain extract, in definite amount. We weighed it in its container, soaked it in alcohol, dried and weighed the box and label, subtracted, and found an error of 25 per cent.

"Has the druggist even weights and scales and graduates of sufficient accuracy for even approximate clinical determinations? Can he analyze urine in a suspected case for arsenic or morphine—fairly simple chemic examinations? Can he prepare extemporaneously, chromic catgut, aseptic dressings, etc.?

"We are writing in no fault-finding mood. We merely wish to impress on the pharmaceutic profession that there is a vast field of usefulness and profit requiring a development of special skill, along logical lines and into which it is practically forcing the medical profession to enter. And, meantime, the former profession is complaining of the non-support of the latter and trying to entice him back by a display of elixirs and 4-ounce mixtures which are almost out of date and which any one with a fairly accurate balance and a 25-cent graduate can compound."—*Buffalo Medical Journal.*

Section on Scientific Papers

Papers Presented at the Fifty-Ninth Convention

A NEW METHOD OF ASSAY FOR ALKALOIDAL FLUIDEXTRACTS.

CHARLES H. LA WALL.

While recently experimenting in the effort to devise a method of assay for fluidextract of colchicum seed I thought of trying the sodium chloride method of salting out objectionable constituents as previously used by me in the method of determining benzoic acid in catsup. (A. J. P., April, 1908, p. 171.)

A number of plans were outlined and tried and a method was soon found, which, when applied to a number of fluidextracts that had been previously assayed by the standard methods, was found to give results practically identical with those previously obtained in each case, with a reduction of about 50% in time, labor and solvents required. The method is as follows:

Dissolve 25 Gm. of sodium chloride in a 100 Cc. graduated, stoppered cylinder, in enough water to make 85 Cc. Add 10 Cc. of the fluidextract to be assayed and then make up the volume to 100 Cc. Agitate well for about one minute. Let stand for five minutes, agitate again and pour on a dry filter. Collect 50 Cc. of filtrate, representing 5 Cc. of fluidextract, and shake out with the proper amounts of the appropriate solvents, as directed for the final extraction of the alkaloid.

It is sometimes, although not always, necessary to return the first portion of the filtrate which comes through cloudy, collecting only clear filtrate for the final extraction.

The sodium chloride, in approximately saturated solution, as in this case, throws out fat, resins, chlorophyll and particularly all substances that are commonly extracted with immiscible solvents such as chloroform and ether.

I have been making alkaloidal assays for a number of years but I have never obtained cleaner final residues than are obtained by this method. The gravimetric and volumetric results check up very closely and the alkaloid is frequently beautifully crystalline.

In such drugs as colchicum seed, physostigma and nux vomica, where there is a large amount of fat present, I have found it necessary and advisable to add 10 Cc. of a 10 per cent. solution of alum in place of part of the water used to dissolve the salt, but I prefer not to use the alum unless necessary, as there is a greater tendency to emulsification when the immiscible solvent is shaken up with the liquid.

The filtrate in most cases is a straw yellow or brownish yellow color, even when very green fluidextracts are used.

The simplicity of the method and its ease of application should recommend it for adoption wherever possible. The only instance among the numerous

samples tried, a list of which is appended, when no satisfactory results could be obtained, is with the fluidextract of cinchona, and in this case the difficulty is not in obtaining a clear filtrate but in the fact that the alkaloids seems to be held back and there may be found the means of overcoming the difficulty in this one case.

In the case of the fluidextract of guarana it was found necessary to cut down the amount of fluidextract used to 5 Cc. and to slightly acidulate the sodium chloride solution, probably to break up the tannin-alkaloid combination.

The use of this process permits assays to be made with surprising speed, as indeed can be understood when one appreciates the fact that only a single and final extraction is required after the precipitation and filtration, which takes not over 10 or 15 minutes from the beginning of the process and that the alkaloid is then ready for gravimetric or volumetric determination or both, as may be desired. The following results have been obtained since the first trial of the process, which was only a few days ago:

	U. S. P Method	Sodium Chloride Method
Fluidextract of Aconite Leaves	0.25	0.24
Fluidextract of Aconite Root	0.44	0.44
Fluidextract of Belladonna Leaves	0.38	0.38
Fluidextract of Belladonna Root	0.52	0.54
Fluidextract of Calabar Bean	0.12	0.13
Fluidextract of Guarana	3.68	3.74
Fluidextract of Ipecac	1.76	1.82
Fluidextract of Cola	0.82	0.83
Fluidextract of nux vomica (total alkaloids)	1.70	1.75

These are sufficiently varied in type to indicate that the process has a wide range of application and its publication without further experiment at this time is deemed advisable in order that it may be tried out by others and thus be made available for pharmacopoeial recognition, if merited.

A method of precipitation and filtration of an aliquot portion for shaking out is already employed with success in the official method of assay of fluidextract of hydrastis where potassium iodide is used as the precipitating agent.

SOME QUERIES ON ALKALOIDAL ASSAY.

W. A. PEARSON.

Much good work has been recently presented on alkaloidal assay, and it is reasonable to expect that much more satisfactory and accurate methods will be inserted in the next Pharmacopoeia of the United States.

There are a few differences of opinion in regard to technique, however, that should be agreed upon before uniformity is to be expected

Query No. 1. Amount of Moisture in Drug.

Crude drugs are not, as a rule, assayed in the exact condition in which they are received. Frequently they must be dried before they can be ground and this loss of water may amount to as much as 30 per cent. Is it advisable to

compute the results obtained to correspond to the original condition of the drug or to the moisture free basis?

Query No. 2. Fineness of Powder.

It is well known that when a powder is ground, all of the particles are not of equal size and that if all the drug is ground and only the particles of a certain size are taken, the sample will not be a representative one.

Would it, therefore, be advisable, instead of stating that the powder should be of a certain fineness, to state that it should be at least of a certain finesness or between certain limits of fineness?

Query No. 3. Temperature.

In certain alkaloidal determinations the temperature plays an important part, in the results obtained. For example, in the assay of opium, the crystalization flask is directed to be set aside in a *moderately cool place.* No limits are given in U. S. P. for "moderately cool" and this temperature has been variously interpreted by different analysts. It is certain that much larger crystals are obtained near 0° C than at slightly higher temperatures; it therefore seems important to ask what influence does temperature have upon the results of an alkaloidal assay?

Query No. 4. Fumes.

Free alkaloids very readily combine with acids, and the analytical laboratory contains fumes of hydrochloric or nitric acids. Before the delicate titration of an alkaloidal residue is made there seems to be danger of these fumes combining with the alkaloid and lowering the results. To what extent does the fumes ordinarily present in the laboratory influence the results of an alkaloidal assay?

Query No. 5. Indicators.

It has been claimed by the analysts in one laboratory that cochineal is the best indicator for all alkaloidal titrations, the men in another laboratory prefer the general use of iodeosin. Does the indiscriminate use of these indicators give concordant results and would the assay be considered as being made according to the U. S. P. if an indicator not specified in the particular assay were used in the titration?

Query No. 6. Color of end point.

In all the alkaloidal titrations, the U. S. P. specifies that the standard solution should be added until a certain color is obtained. Owing to differences in judging the end point and the absence of a definite color standard a considerable variation is to be expected.

Ought not the end point of an alkaloidal titration be determined by matching a certain color of a standard chart under definite conditions?

Query No. 7. Blank determinations.

To avoid the difficulty of judging the color of the end point and to provide a check on the solutions being used a blank determination is usually made by most analysts. Even this method is faulty where the alkaloidal residue still retains some color. Would it be advisable to specify that a blank test be made with every alkaloidal titration.

Query No. 8. Amount of solvent.

Most practical analysts who are regularly making alkaloidal assays are agreed that insufficient solvents are specified for extraction of alkaloids in many of the U. S. P. processes. For example, in the assay of Nux Vomica after oxidation of the Brucine the quantity of chloroform specified will not leave the supernatant liquid clear, nor will twice the specified quantity, but by repeated extractions with chloroform the supernatant liquid will become clear. Is an assay made in accordance with U. S. P. process, when excessive quantities are used? If additional quantities of solvents are allowable, should each extraction be made until no precipitate is obtained with Mayer's reagent?

Query No. 9. Identification of alkaloids.

In the determination of alkaloids from crude drugs the U. S. P. makes no provision for the identification of alkaloids extracted. Would it be advisable to insert identification tests for the alkaloids after they have been extracted and estimated?

Query No. 10. Physiological tests.

After the alkaloids have been extracted and estimated, would it be advisable to insert physiological tests and determine the minimum lethal dose and note the characteristic action?

Conclusion.

In presenting the above queries I realize that I am presenting problems that can only be settled by extensive experimental work. The main practical question is to decide how great these various factors probably are and whether the necessary co-operative work is to be undertaken.

ANALYTICAL DEPARTMENT, SMITH, KLINE & FRENCH CO.

SWEET SPIRIT OF NITRE, A SUGGESTION FOR A CHANGE IN THE FORMULA.

LINWOOD A. BROWN.

Owing to the fact that a very large number of samples of Sweet Spirit Nitre collected by the drug inspector for the Kentucky Agricultural Experiment Station, were found to be badly deficient in Ethyl Nitrite, and the statement by the druggists that they are unable to keep it so that it will retain its strength, has prompted this department to make a study of the question, endeavoring to determine whether the trouble was due to the formula or to the conditions under which it was kept, or both.

The Ethyl Nitrite used in preparing the spirit used in the following experiments was prepared by the formula given in the United States Pharmacopoeia, and which gave a yield of 78.5 grams Ethyl Nitrite. Time consumed in process, two

hours and twenty minutes, the work being carried along with the usual laboratory work.

Experiments Nos. 1 and 2. Thinking perhaps the small amount of water present in U. S. P. strength alcohol might exert a hydrolizing effect upon the unstable Ethyl Nitrite, we prepared 440 grams of the spirit by diluting the Ethyl Nitrite with absolute alcohol (U. S. P.) and assaying by the U. S. P. method, using mercury, however, in place of the saturated salt solution in the nitrometer, and shaking the apparatus after the reaction was over until the solution became colorless.

By shaking the nitrometer until all of the liberated iodine has combined with the mercury, it seems to disengage the NO gas from solution more completely and allows quicker and more accurate readings.

The volume of gas was reduced to standard temperature and pressure of 25° C. and 760 m.m.

After assay, the above preparation was cooled and divided equally and placed in well ground glass stoppered, flint glass bottles, and labeled "Experiments 1 and 2," respectively.

Experiment 1 was placed in ice chest and kept at a temperature of 9-10° C., as were the other experiments, which were subjected to storage in ice chest.

Experiment 2 was placed on shelf in laboratory in rather bright, diffused light and exposed to a temperature of from 20 to 30° C.

Experiments Nos. 3, 4, 5, 6, 7 and 8. The material for these experiments was prepared by dissolving a portion of the Ethyl Nitrite in ordinary U. S. P. alcohol (containing 93.82% ab. alc. by vol.) assayed as before and divided as follows:

Experiment 3 was kept in ice chest at 9-10° C., in glass stoppered, flint glass bottles.

Experiment 4, kept in clear, glass stoppered, flint glass bottles on shelf in laboratory alongside of Experiment 2.

Experiment 5, kept in one-ounce, amber-colored bottles, stoppered with corks soaked in hot paraffin, and then the necks of the bottles dipped in paraffin; bottles kept in ice chest.

Experiment 6, same as Experiment 5, but kept on shelf in laboratory, temperature 20-30° C.

Experiment 7, same as Experiment 5, except it contained 0.25 grams powdered potassium bicarbonate in each bottle, kept in ice chest.

Experiment 8, same as Experiment 7, kept on shelf in laboratory, at temperature of 20-30° C.

Experiment 9. This sample was prepared with 90% alcohol. Sample kept in ground glass stoppered bottle in ice chest.

Experiment 10. Same as Experiment 9, but kept on shelf in laboratory in clear, glass stoppered bottle, in strongly diffused sunlight, temperature 20 to 30° C.

Experiment 11. This sample was prepared with 80% alcohol, kept in glass stoppered bottle, in ice chest.

Experiment 12. Same as Experiment 11, but kept on shelf in laboratory at 20-30° C., in strongly diffused light.

The following table shows the results of our analyses, and we believe show it is possible to make and keep Spirit Ethyl Nitrite of good quality:

Sample Assayed	Mch. 29, '11	Apr. 12	Apr. 26	May 10	May 24	June 7	June 21
Experiment No. 1....	4.36%	4.21%	4.11%	4.10%	4.02%	4.05%	4.01%
Experiment No. 2....	4.36	4.10	3.98	4.00	3.77	3.60	3.49
Experiment No. 3....	4.46	4.28	4.22	4.14	4.03	3.83	3.61
Experiment No. 4....	4.46	4.21	3.88	3.88	3.69	3.63	3.50
Experiment No. 5....	4.46	3.96	3.82	3.76	3.67	3.96*	3.91
Experiment No. 6....	4.46	4.05	3.93	3.77	3.55	3.89*	3.67
Experiment No. 7....	4.46	4.22	4.02	4.03	3.80	4.13*	4.09
Experiment No. 8....	4.46	4.24	4.01	3.81	3.65	4.08*	4.02
Experiment No. 9....	4.46	4.15	4.09	4.09	3.98	3.97	3.81
Experiment No. 10....	4.46	4.02	2.51	2.27	2.12	1.88	1.37
Experiment No. 11....	4.35	4.14	4.07	4.00	3.93	3.79	3.50
Experiment No. 12....	4.35	3.95	3.53	3.28	2.90	1.93	1.17

Conclusion. The deterioration of Spirit Ethyl Nitrite appears to be due to a number of contributing causes, chief among which are: (1) Hydrolysis of Ethyl Nitrite by the water contained in the alcohol used. (2) This change appears to be accelerated by the acid produced during the change. (3) Loss of Ethyl Nitrite by volitilization. (4) Effect of actinic rays of light on the Ethyl Nitrite.

Therefore, in the author's opinion, in order to produce the best and most efficient preparation it is necessary to use absolute alcohol U. S. P., in place of that now in use; to keep the product at a temperature not greater than 10° C. (50° F.) and to keep the product in as small a container as possible, better in the size package called for by the trade, and to protect it from the light by use of amber-colored bottles.

DISCUSSION.

Philip Asher stated that his experience had lead him to believe that the disturbing factor was the slight acidity of the alcohol employed. He had been able to overcome the difficulty by neutralizing the acidity with potassium bicarbonate, and had obtained a spirit of full Ethyl Nitrite content that kept fairly well.

COMBRETUM SUNDAICUM.

I. V. STANLEY STANISLAUS, PHAR. D., PH. D., AND HORATIO C. WOOD, JR., M. D.

Combretum sundaicum Miquel, according to Holmes (P. J., 1907, p. 77), is a shrub indigenous to Sumatra and belonging to the family *Combretaceae;* its leaves are said to have been in use for a long time by the Chinese for curing the opium smoking habit.

An infusion made from the previously roasted stalks and leaves and drunk, is said to quickly give rise to an aversion to opium smoking and hence originates the name of "anti-opium plant."

Upon analysis only tannins and gums have been found, and hence the difficulty to understand the action of the drug. A thought was advanced in Merck's

* Original one-ounce bottle.

Manual of Materia Medica (supplement to, 1905, page 36) that the drug may contain caffein, a substance well known to be an antedote in acute opium poisoning.

Harrison (P. J., 1908, p. 52) has investigated the chemical character of Combretum, chiefly directing his attention to the detection of either an alkaloid or a glucosid, but failed in this respect. He found a resin to which the action of the drug could be attributed.

Through the courtesy of Mr. Henry C. Blair of Philadelphia, we were provided with authentic specimens of the drug, which was investigated by us both chemically and clinically.

In making the proximate analysis the well known scheme of H. B. Parsons as found in Lyons' Pharmaceutical Assaying (1886) was followed. It, in the opinion of the writer, would be an unnecessary procedure to recapitulate herein the scheme, so only the important findings are presented.

Five grams of Combretum in No. 80 powder taken for analysis:

Moisture	3.300%	
Ash	7.500%	
Residue from benzolic extraction	10.600%	
Residue treated with water and evaporated with one drop of hydrochloric acid to dryness at 100 C.; then heated to 110 C. weighed		0.225 Gm.
Residue from benzolic extraction treated with 30 Cc. warm water, filtered and divided into aliquot portions A and B.		
Solution A evaporated to dryness gave a residue.		0.008 Gm.
This residue ignited gave ash		0.002 Gm.
Solution B was tested for alkaloid with Mayer's, Wagner's and Scheibler's reagents		None found
Solution B—another portion was tested for glucose by Fehling's test		None found
Solution B was tested for organic acids: Found gallic acid		A trace
Benzolic solution treated with alcohol (0.848) several times, then filtered and evaporated, gave a residue		0.155 Gm.
An alcohol solution was tested for camphors		None found
An alcohol solution was tested for resins with acidified water, the residue dried and weighed		0.013 Gm.
Chlorophyll was found		Abundant
Calvert test gave no indication of the presence of fixed oils.		
The final residue proved to be a caoutchouc-like substance, dark green in color, and soluble in 4.9 parts of benzol, freely soluble in chloroform, sparingly in ether, but insoluble in either water or alcohol.		
The marc from the first extraction was hot—repercolated with alcohol (0.848) for twelve hours—the extract evaporated. The residue dried and weighed		0.55 Gm.
An alcoholic solution precipitated with ammoniacal zinc acetate solution gave partly tannin, which dried at 120° C. weighed		0.235 Gm.

The precipitate ignited gave ash.....		0.195 Gm.
Difference in tannin weight.....		0.040 Gm., or
found tannin	1.000%	
Basic lead acetate precipitate—treated in the same fashion as the previous gave tannin.....		0.012 Gm.
Total tannin found.....	1.002%	
The filtrate precipitated with sulphuric acid and tested with Fehling solution for glucose.....		None found
The marc from the alcoholic extraction, dried at 100 C. was macerated 10 hours with 100 Cc. of water and filtered. The filtrate was divided in three portions, A, B and C.		
Portion A—evaporated, dried at 110° C. weighed.		0.038 Gm.
Residue ignited gave ash.....		0.0013 Gm.
Portion B—tested with iodin solution gave indication of the presence of erythrodextrin.		
Portion C—tested with ammonium oxalate gave no calcium test.		
When tested with dilute hydrochloric acid a gelatinous precipitate consisting of pectic acid was obtained.		
The marc from the water extraction washed with alcohol and dried at 100° C. weighed....		3.492 Gm.
This was treated with 100 Cc's of water, containing 5 Cc. of sulphuric acid—heated until a drop of it gave no coloration with iodin. No color whatever was obtained. The specific gravity of the liquid was determined and was found to be.....		1.0011 Gm.
The excess over 1.000 or .0011 divided by eight equals	0.00011% of starch, found	
From the above we deduce that the probable principles which are active may be the peculiar tannin, the resin and the caoutchouc-like substance found in the drug, and which latter in the process of roasting may become so modified and rearranged as to give rise to some new principle to which the so highly lauded effects as noticed by the Chinese may be ascribed.		

Credit is herein given Mr. Robert P. Fischelis, Ph. G., for valuable assistance rendered during this investigation.—I. V. S. S.

REPORT OF A CASE OF OPIUM HABIT TREATED WITH COMBRETUM SUNDIACUM.

This plant is a woody climber, belonging to the family of Combretaceae and is found abundantly in the Malay Peninsula, especially in Selangor. A botanical description of it is not necessary as it is a recognized plant in all of the standard botanical works dealing with this part of the world. The story of its introduction into Chinese medicine is given by Wray, which is one of those highly characteristic improbable romances which have been associated especially with nostrums and Chinese remedies. The story goes, that a party of Chinese woodcutters having run out of tea prepared an infusion from this plant as a substitute for their national drink, and in some way, accidentally, opium got mixed with it, and

after taking this mixture for a week they found that their craving for opium had entirely disappeared.

The method of using it in China is stated by Wray to be as follows: The twigs and leaves of the plant are chopped up into pieces of about an inch in length and dried for several days and then the woody portions of the twigs are separated from the leaves by a winnowing process and set aside in a separate sack. The leaves are then thoroughly roasted and mixed again with the sticks. From this mixture a decoction is prepared by boiling eight to ten ounces of the plant in four gallons of water for several hours. This liquid is then strained through a cloth and used before time for decomposition. The opium habitue takes his ordinary daily dose of opium, mixes it with a quart of the decoction and from this bottle he takes at the intervals at which he was accustomed to smoke, a dose of three ounces of this mixture and fills up the bottle with pure decoction of combretum. This method of preparation and use differs a little in details from that which we have seen elsewhere described but in principle all of these methods of employment are that long established practice of gradual reduction in the dose of the narcotic. Even the method of adding an inert substitute for replacing the daily dose of opium taken from a stock bottle is a well recognized method of reducing the dose. I myself have had occasion in treating a patient who had acquired the paregoric habit, to have a preparation made exactly according to the formula of the U. S. Pharmacopeia for camphorated tincture of opium, omitting only the opium and substituting this preparation in the same method as recommended for combretum.

The plant appears to have been used to a considerable extent in the Malay Peninsula and China for the relief of the opium habit. The statements which are made concerning the results from this treatment are, however, vague in the extreme as to the results. I have not yet been able to find a single detailed report of a case treated by the method although there are several articles in which the drug was claimed to have been used with good results. The only trial of the remedy which has been published in this country so far as I know is in the paper of Heffner, read before the Pennsylvania Pharmaceutical Association in 1910. This paper comes the nearest to describing the effects in an actual case of any communication I have seen, although there is no detailed report. The case mentioned after ten weeks' treatment was entirely cured of the opium habit. Heffner also states that others have obtained favorable results from the plant but gives no reference to the literature. It has seemed to me, therefore, worth while to briefly describe the effects which I have noted in a marked case of opium habit.

L. R., aged 37. Some four or five years ago acquired the opium habit through the use of Bull's Cough Syrup, later using paregoric and laudanum. After realizing that he had acquired the opium habit, he took the Contrell Opium Cure, for which he paid $5.00 a week, and after a month's treatment learned that the cure contained morphine. Later he used the alkaloid and states that he has taken as high as forty grains a day of morphine, in from three to five grain doses. About one and one-half years ago he was treated at a hospital and for two weeks after leaving did not take any opium but was now using between three and four ounces of laudanum a day. He was admitted to the Medico-Chirurgical Hospital in April, 1911. An eight-ounce bottle was filled with a mixture of equal parts of tincture of opium and an infusion of combretum (prepared by Prof. Stanislaus).

Of this mixture he was given one tablespoonful every two hours and for each dose that was taken out there was poured in an equal quantity of the infusion of combretum. During the first week, although he was not sleeping well and was distinctly nervous, the symptoms were in no way violent. At the end of this time, however, he became extremely restless and suffered intensely with insomnia, although there was no diarrhoea. The second week of his stay in the hospital was no whit less painful to him than to the opium habitué under ordinary treatment. As the combretum did not seem to exercise any quieting action whatsoever it was stopped and the case treated along conventional lines. He remained in the hospital about six weeks and so far has not returned to the drug.

While from this single case one is, of course, not justified in drawing definite conclusions, it does not seem to me probable that the plant exercises any peculiar effect upon the central nervous system which would explain its action in opium habit. It seems perfectly plausible to ascribe its virtues to the large percentage of tannic acid which it contains. When the infusion is mixed with the opium there is a heavy precipitate consisting, presumably, largely of the tannates of the opium alkaloids. As we administered it, the bottle was always well shaken so that these were also taken.

The effect of the tannic acid will be two-fold. In the first place one of the most troublesome symptoms of the withdrawal of the opium is diarrhoea, which, of course, the tannin would tend to restrain and as the dose of tannin in the method of administration recommended is proportionate to the amount of opium withdrawn, the need of the intestines is gradually met as it occurs. The second factor which has occurred to me, is that the tannate of morphine which is formed, being but very sparingly soluble is absorbed from the intestinal tract very slowly so that instead of the abrupt pleasurable effects of the opium the drug is so slowly absorbed that the patient is continually under a comparatively mild degree of narcotic effect. This, while not sufficient to give rise to the pleasurable sensations is sufficient to prevent the violent disturbances of the nervous system so that with a little determination the patient is able to endure for a time without the drug. As far as I can determine it has been the experience of others that the drug is more useful in reducing the dose than in producing complete cures.

I believe that combretum sundiacum is of service in the treatment of the opium habit, but whether it is of any more service than tannic acid or the other vegetable astringents, I am not prepared at present to say.—H. C. W., Jr.

THE RED TAPE OF DUTY.

"The boy who 'stood on the burning deck,' and who committed suicide on a technical point of obedience, has been held up to the school children of this century as a model of faithfulness to duty. The boy was the victim of a blind adherence to the red tape of duty. He was placing the whole responsibility for his acts on some one outside himself. He was helplessly waiting for instruction in the hour of emergency when he should have acted for himself. His act was an empty sacrifice. It was a useless throwing away of human life. It did no good to the father, to the boy, to the ship, or to the nation."—*William George Jordan.*

Section on Education and Legislation

Papers Presented at the Fifty-Ninth Convention

THE EDUCATIONAL WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION.

M. I. WILBERT.

The object of this paper is to direct the attention of American pharmacists to the work of the Council on Pharmacy and Chemistry of the American Medical Association and to discuss more particularly the educational work that has been done in the past, and the possible elaboration of this same line of work in the future.

The origin and object of the Council has been well outlined by Torald Sollman in a series of articles entitled, "The Broader Aims of the Council on Pharmacy and Chemistry of the American Medical Association," published in the Journal of the American Medical Association, and since then reprinted in the form of a pamphlet for ready reference.

The origin of the Council is also recorded in the Proceedings of the American Pharmaceutical Association for 1905 (Vol. 53, pp. 67-69), so that for the time being it will suffice to state that the Council was organized in February, 1905, for the direct purpose of investigating the then numerous and involved problems in connection with the advertising and use of proprietary remedies. As originally constituted, the Council consisted of three sub-committees—Pharmacy, Chemistry and Pharmacology—with the late C. S. N. Hallberg as secretary and "mainspring."

The functions of the Council were primarily judicial, and its first work was to assist in ridding the pages of the Journal of the American Medical Association of the advertisements of secret or semi-secret proprietary remedies.

To appreciate the really far-reaching effects of this work, more particularly the courage required to carry it on, one must compare a number of the Journal published five or six years ago with a corresponding number of today, and note the direct money loss in the way of "gilt edge" advertising that was involved.

At that time wiseacres on all sides predicted that the undertaking was rank folly, that the Journal of the A. M. A. could not exist without the patronage of proprietary medicine manufacturers, and that the life of the Council would necessarily be a short one.

Fortunately, these prophets had not taken into consideration the fact that the average American, and more particularly the average American physician, is willing to, and does occasionally, do some thinking for himself, and usually follows his thinking up with a practical adaptation of the course that appeals to him.

While the members of the Council, individually and collectively, were maligned and abused in some quarters for being "hare-brained" destructionists, their work was appreciated and praised by the better element in American medicine, and in a surprisingly short time physicians all over the country were willing to have the Council adopt much more stringent rules than the originators of the same had dared to hope for.

At a meeting of the Council held in 1908, the original ten rules were amended so as to provide for a more or less comprehensive investigation of the therapeutic claims made in connection with patented and proprietary remedies. A fourth sub-committee, on therapeutics, was organized, and the advertising pages of the Journal were given a second overhauling, resulting, as before, in a considerable loss of revenue from advertisers of a pecuniarily reliable type, but resulting also in a corresponding increase of respectability and an augmentation in the number of subscribers, showing that physicians at least are willing to learn and are capable of appreciating sacrifices for an evidently just cause.

No inconsiderable amount of the credit for the final success of the Council is due to the activity of the chemical laboratory of the American Medical Association under the supervision of W. A. Puckner, the present secretary of the Council.

This laboratory was organized early in 1906, and the annual reports of the work done, while largely made up of reprints of articles published in the Journal, are nevertheless interesting in that they present for ready reference the unusual, and in many respects original, chemical data involved in connection with the work of the Council.

These "Reports," with the "Reports of the Council on Pharmacy and Chemistry of the American Medical Association," now also reprinted annually, the "Propaganda for Reform in Proprietary Medicines," and the current number of "New and Non-Official Remedies," contain a rather complete reflection of the various activities of the Council that are more fully recorded in the 8,000 or more pages of the weekly "Bulletins" circulated up to the present time.

As the total of these reports comprises upwards of 1,400 printed pages, it would be futile to endeavor to reflect the various accomplishments of the Council in the course of a short paper.

It may be permissible, however, to recall to your attention the work done in exposing the nature of the acetanilide mixtures, the discussion on the misuse of digestive ferments and liquid foods, and last, but by no means least, the exposition of the misleading claims that were made in connection with Arhovin, Somnos, Isopral, Chinosol, Probilin, Collargol, and a host of other proprietary preparations, now living or dead, which were being marketed by the manufacturers with a view of securing prompt returns on money invested in printer's ink.

Since 1908, the Council on Pharmacy and Chemistry has been increasingly active in a systematic investigation of the various problems that are involved in present-day therapeutic practices and has busied itself with the development of plans for the systematic upbuilding of a rational materia medica by means of which it should be possible to eliminate at once and for always both therapeutic nihilism as well as therapeutic fetishism, and to place therapy on a firm foundation of well established truths.

From the very origin of the Council, the members have appreciated the need

for conducting an educational campaign in favor of recognized open formula or official medicaments.

The earliest efforts in this direction were undertaken by individual members of the Council through the publications of the Journal office.

Beginning in 1905, there appeared in the Journal of the American Medical Association a series of articles entitled, "The Pharmacopoeia and the Physician." These articles were designed to call attention to some of the more reliable, official medicaments and to point out the advantages, to both physician and patient, that might accrue from the rational use of U. S. P. and N. F. remedies.

The articles were subsequently published in book form, and have been since reprinted on two different occasions.

Early in 1906, largely through the initiative and instrumentality of the late C. S. N. Hallberg, the American Medical Association published an epitome of the U. S. P. and N. F. under the title, "Manual of the U. S. Pharmacopoeia and the National Formulary."

This latter publication proved to be the immediate incentive for the now widespread U. S. P. and N. F. propaganda that has done so much to direct the attention of retail druggists to the possibility of improving their own standing in the community by developing the professional side of their calling.

Following the publication of these books, an effort was made, through a special committee, to induce teachers of materia medica to devote much, if not all, of their time to the discussion of well established official medicaments, so as to give to future generations of medical men a thorough grounding in the possible uses and limitations of the more important articles in our materia medica.

While this work has not been entirely futile, the practical results have not been commensurate with the time and money that have been expended. The reasons for this apparent failure are directly traceable to the redundancy of the present official standards for drugs and medicinal preparations and the ever threatening possibility of having one of the members of the state board of medical examiners propound a question regarding the possible uses and action of some little known or practically obsolete drug.

This latter obstacle is now in a fair way of being overcome, and with the co-operation of the several state boards and the teachers of materia medica and therapeutics, the Council has reasonable hopes of being able to issue a list of reliable medicaments to which systematic instruction in materia medica can largely be confined.

This then, leads up to the most recent and perhaps the most important piece of investigative work as yet undertaken by the Council; a systematic review and study of the moot points in drug therapy. While it is true that here the individual problems are legion, it is, nevertheless, expected that many of them can be satisfactorily studied in a reasonably short period of time, and that this work once thoroughly established, will be taken up and continued by individual investigators and by other medical organizations.

It is not expected to revolutionize the materia medica of the country in any given period of time, but it is expected that a systematic and conscientious investigation of the truth or falsity of certain statements made in connection with more or less well established remedies will serve to put the practice of drug

therapy on a firm foundation, against which the "isms" and "pathies" of the future will rail in vain.

The program, as outlined, is broad enough for all who are interested in the development of scientific medicine to participate in, and it is to be sincerely hoped that the members of the American Pharmaeutical Association, both individually as well as collectively, will lend their aid in clearing up some of the many perplexing questions in connection with the origin, composition and uses of well established drugs.

THE REAL EDUCATIONAL NEEDS OF THE PHARMACIST.

HENRY P. HYNSON, PHAR. D.

These conclusions are arrived at from a point of view secured by standing upon a mass of my own needs and deficiencies, that is heightened and made more secure by the deficiencies of many proprietors, with whom I have come in contact, and, more particularly, by the glaring defects of clerks I have employed.

It must be clearly understood that I am not presuming to criticise the syllabus of studies outlined by the able national committee which has had that matter in charge; indeed, I will be glad if I am able to assist that body of earnest workers in the good work they are doing.

It would seem, that a person knowing and knowing well, all the subjects that committee has prepared for a college curriculum, might be a fairly good pharmacist. Yet, I believe there will be many who will make, when the course of studies proposed is put into operation, a uniform rating of over ninety percentum, and then fail, sadly fail, to meet the requirements of the retail pharmacist of today, even in strictly pharmaceutical pursuits.

I will confess that my standard of success is quite different from that of many others who may be very properly rated as both sane and sound. The mere fact that a pharmacist wears large diamonds in his shiny, celluloid shirt front, or rides in an orange, red and green colored automobile, or cleaves placid waters with a sputtering motor boat, and pays for them all, while still having "money to burn," does not, in my opinion, prove that he is or has been a successful pharmacist. I am quite ready to grant that money making and money saving constitute one and a very essential element of success. Any one who, barring unusual misfortune, fails to do this can not be styled successful. But, beside providing for himself a comfortable living and a few ducats for a "rainy day," the really successful pharmacist must have made himself truly useful to the community in which he is located and, by all means, he must have won respect for the vocation in which he has served; glory and honor must have been added to his profession because of *his* accomplishments and because of *his* honorable practice. Only such practitioners will be remembered; only such practitioners will leave the world of pharmacy and, incidentally, the world at large, better because they lived, thus evidencing the only kind of success that is really worth seeking.

Now, to win such satisfactory results, one must, of all things, have an

abundance of *common sense*. That means, I believe, that he should possess that quality of mind which will prevent him from making a fool of himself when solving problems, the exact counterpart of which he has not solved before or which have not been solved in his presence. Some call it logic, some call it reason, but it is neither, because satisfactory results may not follow the use of these qualities. It would be better to style it self-reliance or dependence upon natural "wit."

I do not believe it can be accurately concluded that this "common sense" is ever inherent; I am strongly of the belief that it is, after all, acquired through experience. Here, the important matter for consideration is to find out how it is that some acquire so much of this most valuable knowledge quite early, even with their first impression. If it *is* environment or parental excellence, then, for the love of coming generations, let us try to find what and how it is, that very many more may acquire it.

I do not want to be hazy about this; I trust to be understood and as saying that when this quality of mind is found lacking in a student or apprentice, in some way or another, it must be supplied to him and, if he can not acquire it by some process of education, then he must be forced out of Pharmacy's domain by our colleges, or if not by them, by our boards. Judging from the output of a half dozen colleges, I am inclined to think the schools have not been able to eliminate this fool-class of would-be pharmacists. To do this, however, is fundamental, and we must not be satisfied; we, who try to be honorable and true, must not be satisfied until we "nip off" these entirely impossible buds from the pharmaceutical bush, quite early, even before they begin to open. But to do this effectively, we must establish a just and thorough test for "buds". Anxiously, I wonder if it will ever be possible to use such tests in unendowed schools?

Another peculiar something a pharmacist needs to be taught is to be dignified; he must acquire true dignity. By this, I mean he must be intelligent enough, careful enough and honest enough to know himself and, thus knowing himself, he must be so well equipped as to win, first, his own respect and, secondly, the respect of those who really and truly know him.

True pharmaceutical dignity, then, is the behavior that is inspired by reasonable self-respect and by the generous respect of those with whom we come in contact in the practice of our profession. Refinement and dignity are much the same or are, at least, inseparable. Both are the result of self-examination and self-instruction, acquired and stimulated by comparing ones self with idealistic standards of excellence; when he should be more accurate in his findings and more severe in his requirements for himself than he is in his estimation of others.

We pharmacists need, probably more than anything else, to be cultured; broadly cultured. I understand culture and training to mean much the same. I do not believe either consists entirely in possessing much knowledge of the classics, of higher mathematics or of many modern languages. All these contribute to culture, but I question the quality of any one's culture when he is not able to make himself easy in polite society or able to successfully meet the requirements of higher social life. The appropriately cultured person is always conventional, and it is a sad spectacle one makes who is conspicuous because of oddities that are his.

Standards for culture may be selected from those persons in a community who enjoy universal respect and from those who are prominent because of real worth and because they really merit the position they occupy. It is quite easy to separate the true from the false, in any community, and thus find helpful standards.

Yet, withal, pharmacists, like all men who really bear the image of the creator, need to be or to become truly romantic; that is, able and willing to do even the unusual, if that is necessary for truth's sake. Romance never clashes with the conventional; it is often the quality that enables us to be conventional at the sacrifice of pride, ambition or some such less creditable attribute of our nature. We are romantic when we sacrifice possible gain, gain that others do not hesitate to acquire, because we will not ignore the higher ideals of our vocation, and it is the true and beautifully romantic spirit that enables up to resist temptations, to do the right and boldly stand for the nobler and more useful forms of practice; certainly that form which obeys civil law and follows the leadings of the more delicate precepts of personal righteousness.

The pharmacist needs to be taught and to learn much more regarding true art; he must, indeed, become more artistic. Probably, such knowledge is really a part of general culture; certainly, one may be neither polite nor dignified without a fundamental knowledge of art. It is this information that will make him able to appreciate real values and it is this same knowledge that will lead him to employ durable, appropriate and useful fixtures and appointments in the prosecution of his business. Nothing, it is believed, conduces so largely to the doing of better things, in better ways, than does this knowledge of true art. It inspires its possessor with the desire to present the higher forms, those that more nearly approach the ideal. The real artistic spirit will guard one against committing vulgarities which entirely counteract the helpful influence of the highest technical acquirements.

I have not intended to convey the thought that less technical knowledge is required. I would, however, suggest this, in case it be found necessary to make place for this more general teaching.

I am confident, because of what I have heard so many times, that it will be said these broader teachings are no part of a technical training. Let me advise that I have not attempted to discuss the technical training of the pharmacist at all, but have tried to show what I believe to be his greatest educational needs, no matter where they are to be supplied, and I am trying to be extremely practical by calling attention to the fact that there is, annually, going to the schools of pharmacy of this country, as has certainly been the case since 1876, a class of young men who need and have needed the very instruction that I have suggested; needed for the better serving of the public, for the greater advancement of pharmacy and for general betterment of themselves. Do not overlook the fact that it is this kind of grist that has been coming and continues to come to the pharmaceutical college mill. I believe I may truly say it is the very same kind that will continue to come for years and years. Therefore, I believe it to be our duty, a part of our work, to so modify our mills that they will clean this grist and prepare it for the final finer grinding. Let us take it as we find it, as it comes to us and, during a preliminary year, blow out all the chaff, blow it forever

away, while cleaning and polishing the sound grain. As it is, we are mixing chaff and crudities and deficiencies and misfortunes all together with results that are, by no means, satisfactory to the three factors most interested: the public, the employer and the employe. Secondary schools may help and colleges may more largely assist, but while these remain such uncertain quantities as they now, most certainly, are, a practical preparatory course in the schools of pharmacy is really the only thing that will supply, out of the material at hand, the quality and quantity of pharmacists required to meet present day demands.

Common sense, dignity, culture, are the possessions; romantic, artistic are the qualities. Is there a successful practical pharmacist within the sound of my voice, or anywhere else, who will not admit, when he fully understands what these mean, that they are more essential to the really helpful assistant than is all the strictly technical training he may secure at the best of our pharmaceutical schools? These possessions and qualities make up the advantages that it has been thought result from "drug store experience". It is very true that, when this so-called experience gives such things, it is, indeed, most advantageous. But what is the situation when it does *not* give these, but instills everything that is contrary, what then?

Let us see, just for a moment, what these possessions and these qualities mean. Common sense, I believe, means no more than the ability to properly attack a problem. When a clerk "goes at a thing right," we know how valuable he is; how safe he is, and how much he will accomplish. We all know that this ability does not come from technical training, necessarily, although technical training, if properly directed, will greatly assist in its development.

Dignity and culture make the successful salesman or merchant; they claim respect and inspire confidence. These, assisted by artistic temperament and attainments, make an invincible combination that will be more effective in the proprietor than it is in the assistant, however powerful it may there appear. Carriage, manner, conversation, dress, store, stock, utensils, labels, advertisements, everything material that is worth while, should come under the beneficent control of these: dignity, culture, art.

It is, however, the romantic spirit, true heroism, that makes up the character and shapes the policies of the business and the business man. Nothing less and nothing different will prove effective. Neither fear of the law or lust for gain will be powerful enough. Romance, alone, will bring about good results; love it is, after all, love for the real, the true and the good.

And so, my dear friends, with the material at hand, we must try a year of probation; a year of tutoring in common things, that are really higher things; a year in making up deficiencies and in smoothing rough surfaces; a year in refining, which means a year of much elimination, of *helpful* elimination. Am I understood? Three years? Yes, by all means, but be very careful that there is no more of the technical than there is now. One year of fundamental preparation; one year devoted to making and finishing *men;* two years devoted to making and finishing practical, useful pharmacists.

Section on Practical Pharmacy and Dispensing

Papers Presented at the Fifty-Ninth Convention

A NEW METHOD OF MAKING TINCTURE OF OPIUM.

WILLIAM R. WHITE.

Tincture of opium, which is undoubtedly the most important galenical preparation in the Pharmacopoeia, has been the subject of much study and investigation. Many methods have been devised for its manufacture, the majority of which have involved both the principle of maceration and percolation. The chief feature of this method, however, is that it is based entirely on the principle of maceration. There are three points in which the writer claims it has an advantage over the U. S. P. method:

First. It entirely exhausts the opium.
Second. It avoids the slow process of percolation.
Third. It recovers a part of the menstruum left in the marc.

The process is as follows:

Take 100 grams of U. S. P. granulated opium and add to it 500 c. c. of boiling water; macerate for 48 hours with occasional stirring; add 500 c. c. of alcohol, macerate again for 48 hours with occasional agitation, allow the drug to precipitate; decant the clear supernatant liquid, place the residue on a filter and allow the menstruum to filter until it ceases to drop, then place the filter and contents in a tincture press and express as much as possible; add the filtrate to that portion decanted, measure the whole, noting the difference between that obtained and the 1000 c. c. first used. The marc is then exhausted with hot water by adding about 80 c. c. at a time, allowing it to macerate a few hours, then expressing it. This operation is repeated until the opium is exhausted, which can be ascertained by testing the filtrate with the general alkaloidal reagents. The combined extractions are then evaporated on a water bath until the volume is equal to one-half the difference noted above. This is then mixed with an equal volume of alcohol and added to the measured filtrates. The whole tincture is then filtered, and is ready for use.

If a press is not available, the same results can be obtained in the exhaustion of the drug with the hot water by repeatedly macerating and filtering instead of expressing, except that all of the alcohol left in the marc will be lost by the subsequent evaporation.

About 400 c. c. of hot water has usually been found sufficient to complete the exhaustion. Some samples of opium, however, seem harder than others to

exhaust. The principal objection to this method is the time that is required in evaporation. This is to a large extent under the control of the operator and can be hastened when desired by using a greater number of evaporating dishes or by evaporating in vacuo.

There seems to be no longer any dispute over the question whether water will exhaust opium of its morphine, since the U. S. P. has ruled upon this fact in its directions for making the deodorized tincture opium, also in the extraction of the opium in the assay process.

In 1902, Dr. E. A. Ruddiman published an article in the Bulletin of Pharmacy, vol. xvi., p. 368, in which he claimed that the opium was not entirely exhausted by the dilute alcohol used in the 1890 U. S. P. process.

In 1906, H. A. B. Dunning, in a paper read before the A. Ph. A., stated that it had been proved by assay that neither the old nor the new U. S. P. method for making tincture opium exhausts the opium completely. After repeatedly assaying the tincture made by the above method, the writer can state that his results have proved conclusively that this method does completely exhaust the opium of its morphine.

The saving in alcohol by using this method is quite an item in the cost of the tincture, especially where large quantities are made at a time.

In conclusion, the writer will state that this method has been in constant use by one firm for fifteen years with the most favorable results, and it is his firm belief that the practicability of this method will appeal especially to those pharmacists who are not prepared to assay their finished tincture.

NATIONAL FORMULARY AND U. S. P. WORK—WHAT HAVE YOU DONE WITH IT?

WM. A. HALL.

The U. S. P. and National Formulary work—What have you done with it? The thought that was in my mind a year ago when I consented to prepare a paper was a litle history of what has been done in Detroit along that line, thinking it might be of help to organizations in other places, and that they might profit by what fruit we had gleaned out of it.

We first considered this work some six years ago. I think 1905 was the inception of it. We started in with the meeting that the Wayne County Medical Association had on the "U. S. Pharmacopoeia" which had just come out, and at that time we read a paper before the physicians and quite a number of the pharmacists of the city that were invited to be present on "What Physicians Are Prescribing." We were met with open arms by the physicians and invited to come again, and the thought was in each one's mind, both pharmacist's and physician's, that the idea was a happy one of a joint meeting. A committee was appointed by our local Pharmacists' Association, the Detroit Retail Druggists' Association, and secured the following year Prof. Schlotterbeck, who presented "Synthetics" for consid-

eration. Every meeting we have had has been one of constantly increasing interest on the part of both pharmacists and physicians. The physicians have been entirely willing to meet us half way and bridge over the chasm, that is wont to be assumed as existing between the two professions, and placed many orders for copies of the U. S. Pharmacopoeia and National Formulary.

Next year we took up the question of the U. S. P. and N. F. preparations. We had our committee prepare six or eight samples of a dozen or fifteen preparations so that we had quite an array of samples on the table for the inspection of the physicians at the time of the meeting. The physicians discussed and commented freely on the very favorable appearance of the preparations. That did us a great deal of good, not only in the way of having these preparations prescribed, but it gave the physicians an idea of working away from the proprietary remedies, along lines of legitimate work, along the lines of the U. S. P. and N. F. preparations—not that other preparations of merit should not be prescribed—because they are and will be, but that the work should be along *ethical* lines—it must be carried along the lines which are advocated by the American Pharmaceutical Association, the N. A. R. D. and by the American Medical Association. The N. A. R. D. took this matter up, as you have read in "Notes," and then later evolved the scheme of having a write up of the preparations sent to a list of physicians that the local druggists selected along with some literature on these special preparations. Then the druggist following up the plan should detail the physicians individually, have a talk with them, and thus help to create a kindly relationship even outside of the detail work.

We followed the presentation of these preparations next year with an address by Prof. Remington on the subject of "The Pharmacopoeia and the Physician." The following year "Preparations" were again taken up and a chart prepared showing the increase or decrease of the sales of about ten of the leading proprietary medicines in the Detroit markets and those that would not be considered ethical preparations. Last year, we adopted after discussion resolutions instructing our delegates to the U. S. P. Revision Convention. This year we had Prof. Hynson who spoke to us on "The Formation and Workings of the Committee of Pharmacy and Chemistry of the American Medical Association," as well as a clear presentation, with historical references, of the relations that should exist between the pharmacist and physician. All these meetings were helpful. They brought the ethical preparations before the physicians' minds and it resulted not only in a general enlightenment but a decided increase on the part of the physician of that line of preparations, thus benefiting not only the physician but also the patient and the druggist.

I took pains to collect some data in reference to this work by inquiring of different representative pharmacists in the city. Taking two hundred prescriptions in the year 1907, when we made our first samples, and in 1910, when the canvass was made, it showed a very gratifying result. The figures were, in brief, as follows: In 1907, of the 200 prescriptions that were looked up, there were called for of the U. S. P. preparations and definite chemicals 372 ethical preparations. In 1910, after three years' work, there was a call for 440, showing an increase of 18%. On these same 200 prescriptions there were 102 patents and proprietaries called for in 1907, while in 1910 only 52, a decrease of 50%. In

1907 the per cent of the special or proprietary articles to the total number of articles called for in these same 200 prescriptions, was 17.4%, while in 1910, the per cent had dropped to 11.8. What was done in Detroit can be duplicated in other places. But you will say that we have the physicians *prescribing* in Detroit. All right, but how do the pharmaceutical houses get *their* preparations called for by the physician? Why, by detail work, and we can do the same, and don't neglect the valuable team work or get-together meetings. Now it seems to me we can do something and in the end the physician will get into the habit of prescribing the preparations that we so desire to get before him. If he sees that the local druggist can and does make the preparations that he wants to use, will it not be a natural thing for him to designate these? These preparations may be made *for* you if you do not care to make them yourself, but the idea is to get better preparations, more ethical preparations in use by the physicians which will result in a betterment all around.

Briefly, these are the results which we have been able to attain. The many physicians assured different members of our organization of their thanks that we brought these things up before them, and I hope what has been our experience in good results may be your experience too.

THE MICROSCOPIC CRITIC.

"Most people study character as a proofreader pores over a great poem; his ears are dulled to the majesty and music of the lines, his eyes are darkened to the magic imagination of the genius of the author; that proofreader is busy watching for an inverted comma, a misspacing, or a wrong-font letter. He has an eye trained for the imperfections, the weaknesses. Men who pride themselves on being shrewd in discovering the weak points, the vanity, dishonesty, immorality, intrigue and pettiness of others think they understand character. They know only part of character—they know only the depths to which some men may sink; they know not the heights to which some men may rise. An optimist is a man who has succeeded in associating with humanity for some time without becoming a cynic."—*William George Jordan.*

TRUE WORK NEVER FAILS.

"There is no honest and true work, carried along with constant and sincere purpose, that ever really fails. If it sometimes seem to be wasted effort, it will prove to us a new lesson of 'how' to walk; the secret of our failures will prove to us the inspiration of possible successes. Man living with the highest aims, ever as best he can, in continuous harmony with them, is a success, no matter what statistics of failure a near-sighted and half-blind world of critics and commentators may lay at his door."—*William George Jordan.*

Section on Commercial Interests

Papers Presented at the Fifty-Ninth Convention

PERSONALITY IN PHARMACY.

P. HENRY UTECH, PH. G.

So many different factors enter into the regime of the pharmacist's life that it is well nigh impossible to determine with any degree of accuracy just which forces play the more important role in the scheme of the successful man's career. Any attempt to analyze the problem must necessarily take into account such vital factors as talent, opportunity, heredity, environment, etc., and then by some process of elimination, or natural selection, determine, psychologically or otherwise, just how far or how much each of these factors have exercised their influence or power in shaping the destiny or career of the individual. To have made a success of life is the crowning ambition of man. To have achieved this unique distinction is the highest glory of mankind. According to one authority, the receipe is very simple. He says: "Success in life represents a rule in three. Multiply one's talent by one's opportunity and divide by circumstances and limitations, and you have the career." But leaving aside the psychology of the matter for others to discuss, let me call your attention at this time to still another all-important faculty and note briefly the importance of personality, i. e., how our personal attitude may be looked upon as a fundamental asset in conducting a successful business, be it pharmacy or otherwise. Let us pause, therefore, and inquire into the problem of ourselves and see how far the personal element has contributed to our personal welfare; and see at the same time, how many of our fellow workers place such little emphasis on personality as a factor in determining the relative position which they occupy in the world of business.

The world today—as in all the ages of the past—still gives the first prize to persons of high and noble character, all other attributes appear to have lesser consideration. One of the first prophets in history was cognizant of this condition when he gave the admonition that "a good name was rather to be chosen than great riches," but somehow, in our eagerness to achieve material success, maxims, wisdom and past traditions, are all scattered to the wind. It is unfortunat that more of our pharmacists are not possessed of higher ideals, for I know of no profession or vocation, in which the note of personality is so all important. To have acquired the respect, esteem and good will of a community, is the best asset a business man can command. Many a man has built up a future on reputation of his good name—it represents sterling worth in character, as in metal. Having acquired this reputation for honesty, integrity, uprightness in your dealings, the battle is almost won. Instinctively, people prefer to deal with a high rather

than a low type of individual; there is a feeling of security and satisfaction about it, an inherent sense of admiration for the person of clean character and high ideals. And in addition to all these advantages, the business community trusts and respects him, takes note of his work and ability, and when the opportunity calls for responsible men, his name appears first on the list.

Perhaps some of you may think this is not the time, nor place, to enter into a discussion of the question of morality, but the problem of honesty and integrity is so closely identified with the new standard of ethics in business, that it becomes our bounden duty, as pharmacists, to awaken from our lethargy, particularly at this time when the public scrutiny is upon us and when we have the endorsement and approval of the chief executive of our land, who has confidence in our ability and who is inciting us on to still higher ideals of social responsibility.

We are living today in an epoch-making period in the history of pharmacy. Our profession is undergoing a great crisis, and the public eye is upon us as never before. Two great national issues are before us demanding consideration, viz., the ethical standard of our products and, our attitude toward the liquor question, and the individual conscience—the personality of each and every pharmacist—will determine just what our measure of success in dealing with these problems shall be. Since the passage of the Pure Food and Drugs Act, the question of honesty and morality in articles of food and drugs is being freely and thoroughly discussed everywhere. For some unaccountable reason, many of our people inherently believed that most drugs were either poisonous or adulterated, but thanks to our good friend, Dr. Wiley, his able assistants, and the influence of the secular press, this opinion is being successfully controverted. Still it behooves us, as loyal workers in a common cause, to render all the assistance possible, each in his own community, to clear up any local prejudice or misapprehension that may exist, and thereby indirectly elevate the whole moral standard of our calling. The combined influence of such a concerted effort cannot fail to be productive of great and lasting benefit.

The other phase of public scrutiny to which we as a profession have lately been subjected, is the problem of liquor selling. And it is this particular feature of our business which is mainly responsible for bringing odium and disfavor upon us as a profession throughout the length and breadth of our land. While we have thousands of honorable, upright, conscientious men engaged in the business of pharmacy, the small percentage who indulge in this debasing and nefarious practice, naturally bring the entire profession into disrepute. Unfortunately, the world does not judge people, or a profession, by its highest types, but prefers to cast the lot of the whole with the few, who, taking advantage of their social position, indulge in all sorts of mercenary and illegitimate practices in their wild desire for material gain. But the battle is on, and we cannot afford to ignore it. We shall have to gird our loins, like the knights of old, and call into play all the latent forces at our command if we are to emerge victoriously from the impending crisis. Our personality must positively and definitely assert itself if we would preserve the integrity and good name of the profession which we have the honor to represent. Just what measures to employ in order to combat this growing menace in our midst, is not for me to suggest. Much abler minds than mine have been baffled in their endeavors to curtain this pernicious traffic. That

eminent scholar, Martineau, says somewhere, "Until somebody has a conscience nobody can feel a law," and I should be glad indeed to have this grand old association—which has already fought many a battle for the interests of legitimate pharmacy—endorse this sentiment and take some definite action in condemnation of this open and deliberate practice by the pharmacists of our land. This much we can do—this much, as an organization looking for the uplifting of pharmacy, we ought to do. Economists tell us that idealism for the few is not possible until we all attain perfection, and the object of this paper is simply to urge our fellow workers to advance a few steps toward the attainment of an ideal profession of pharmacy.

BEWARE OF SCHEMES THAT ARE QUESTIONABLE.

"Beware of the many alluring schemes that are being constantly cooked up by 'get-rich-quick' sharps and brought to you for adoption for the alleged purpose of increasing your business. They look very enticing if you fail to go deeply into their outcome, but are always very costly to the victim, knowledge of which comes too late to be of service. If you permit yourself to be cajoled into identifying your store with any one of these schemes you will discover shortly that your neighbor has gone you one better, and taken up with another, that will double discount your fake game—and so it will go on until business becomes thoroughly demoralized and you will all be hunting ways of escape.

"Our Association succeeded some years since in entirely eliminating all the nuisances of this character from the drug business, but it has taken hard work and eternal vigilance ever since to keep clear of them.

"We have been led into the writing of this article because calls have been coming from all directions concerning a lottery scheme that is being pushed under the auspices of one of the daily papers of the city, that is being urged for the purpose of increasing its own income by depleting yours. We are amazed that a reputable journal would take up with such a questionable method of advertising itself at the cost of its friends and patrons, whose business will be demoralized and unsettled by falling in with it.

"Do a litle quiet thinking before the damage is done."—*Western Pa. Retail Druggist.*

Section on Historical Pharmacy

Papers Presented at the Fifty-Ninth Convention

THE EARLY HISTORY OF THE MASSACHUSETTS COLLEGE OF PHARMACY.

ERNEST C. MARSHALL, PH. G.

The organization of the Massachusetts College of Pharmacy was the result of the efforts of the Massachusetts Medical Society to improve the practice of pharmacy in the state during the early part of the last century.

The records of the Medical Society from 1821 to 1824 contain frequent references to the relations existing between the apothecaries and the physicians and to the need of a better education of the pharmacists of the state, and of a regulation by the commonwhealth of the practice of pharmacy.

On June 6, 1821, the Society appointed a committee to see if the apothecaries "will conform to the Pharmacopaeia," and also one, consisting of Drs. Mason, Hayward, Bigelow, Chaplin and Wyman, on "the better education of apothecaries."

October 2, 1822, the Society voted that its fellows should write recipes after January 1, 1823, according to the new Pharmacopoeia and to advise the apothecaries of their purpose by publication in the Columbian Centinel, Patriot and Advertiser.

June 4, 1823, it appointed a committee to render more safe the retailing of medicines and followed this by the appointment of another committee to petition the Legislature, either alone or in conjunction with the apothecaries, for the better regulation of pharmaceutical practice throughout the state.

February 4, 1824, the committee on the subject of the education of apothecaries reported, which report was accepted and the committee were requested to report from time to time upon the subject.

The first meeting of the organizers of the Massaschusetts College of Pharmacy was held at the call of Dr. Ephraim Elliott (A. M., Harvard, 1780), Daniel Noyes and W. B. White, on February 7, 1823. At this meeting Mr. Terence Wakefield was chosen moderator and Mr. Samuel N. Brewer, secretary.

The only business which appears by the record of the meeting to have been transacted was the reading and the discussion of a communication from the Massachusetts Medical Society to "the Druggists and Apothecaries of Boston," and the appointment of a committee representing the Pharmacists to meet the committee of the Massachusetts Medical Society for the purpose stated in the communication, said committee to report at an adjourned meeting.

Another meeting followed this one on a date not specified in the record and a

report from the committee appointed to consult with the committee of the Medical Society was received, which report seems to have been allowed to rest in abeyance for some months, for the next meeting of the organizers appears to have been held on December 8, 1823, on which date a committee was appointed to take the report of the previous committee into consideration.

Although considerable effort has been made to ascertain the exact tenor of the communication from the Massachusetts Medical Society to the druggists and apothecaries of Boston and of the report from the committee thereupon, the work has been fruitless of result, but the substance of the communication may be inferred from a petition of the Massachusetts Medical Society to the Legislature, which petition was filed on June 6, 1823, by a committee, of which two of its members were John Gorham, Professor of Chemistry at Harvard College, and Jacob Bigelow, Professor of Materia Medica of the same institution. The petition reads as follows:

BOSTON, JUNE 6, 1823.

To the Honorable Senate and House of Representatives in General Court Assembled:

The undersigned, a committee of the Fellows of the Massachusetts Medical Society, beg leave to respectfully represent that the compounding and vending of medicines in small quantities by unqualified persons is attended by extreme hazard to the community and that mistakes of an alarming if not of fatal character have arisen from this source.

They would beg leave further to state that this evil is of such a nature as will in all probability increase with our increasing population, as physicians are daily discontinuing the practice of compounding or preparing the medicines which they use, and have therefore become in a great measure dependent upon the druggists and other retailers of medicines. They therefore pray your honorable body that the Counsellors of the Massachusetts Medical Society together with an association of apothecaries for all parts of the commonwealth, *if such an association should hereafter be incorporated,** may have the power to appoint boards of examiners in various parts of the state, who shall examine all persons who may hereafter wish to compound or retail medicines in small quantities, or to put up the prescriptions of physicians, and to grant licenses without expense to those who may wish to retail medicines, and they further pray that said board may have the power to determine upon what subjects the candidates shall be examined and be allowed to prohibit all others than those who have passed an examination or been licensed for retailing medicines in small quantities after the passing of this act prayed for, *and in case no association of apothecaries should be formed at present,** the undersigned respectfully pray that the Counsellors of the Massachusetts Medical Society may have the power of appointing the boards of examiners and proceeding in the business alone until *such an association may be formed,** and as in duty bound will ever pray.

JOHN G. COFFIN,
DANIEL THURBER,
GEORGE HAYWARD,
JACOB BIGELOW,
JOHN GORHAM.

This petition shows conclusively the desire of the Medical Society that an association of the druggists should be formed to co-operate with it in the regulation of the practice of pharmacy in the state, and also the lines along which its committee

* The italics are ours.

was proceeding, and it is therefore considered probable that the business of the letter to the druggists which was considered at the first meeting of the organizers concerned the formation of such an association.

The petition of the Massachusetts Medical Society was opposed with acrimonious articles in the press of that day, principally in communications signed "Vesicator," in which articles the members of the Medical Society were termed pickpockets, tyrants and accused of being influenced solely by mercenary motives, and the Legislature gave the Society leave to withdraw its bill and petition.

But, notwithstanding this, the endavor set in motion by the Society continued to receive the approval of the druggists, at least so far as it related to their organization and education. On December 11, 1823, an adjourned meeting of the organizers was held at which meeting letters were read from several of the trustees of the College of Apothecaries in Philadelphia; these letters presumably supporting the idea of the organization by the pharmacists of Boston, and a committee was appointed to draft a constitution and by-laws and to report a plan for a permanent organization.

On December 26, 1823, this committee reported a plan of organization and a constitution, both of which were adopted by the organizers and the meeting then adjourned until December 29, 1823, on which date the first board of officers for The Massachusetts College of Pharmacy was elected and the college came into actual being; Dr. Ephraim Elliott being chosen as its first president.

The New England Journal of Medicine and Surgery thus notes the birth of the college, in its issue of January, 1825:

MASSACHUSETTS COLLEGE OF PHARMACY.

An institution with this appellation has been organized in this city and has gone into operation. Its objects are stated in the preamble of the constitution to be: 'to provide the means of a systematic education; to regulate the instruction of apprentices, to promote a spirit of pharmaceutical investigation and to diffuse information among the members of the profession; to discountenance the sale of spurious, adulterated and inferior articles, etc.' We are happy to perceive upon the list of members the names of the most reputable apothecaries in this city and we hope most sincerely that the laudable and truly important objects which they have in view may be fully answered.

The preamble of the constitution adopted by the organizers is noteworthy. It reads as follows:

PREAMBLE.

The apothecary is intimately connected both with the mercantile and the learned professions. On the one hand, he must become acquainted with the principles and the various forms of commercial transactions, and acquire the enterprise, prudence, and skill of the merchant; and on the other he must familiarize himself with the branches of natural science which are cultivated by the physician.

Medical science has for its object the cure of diseases. For this purpose, the character of the diseases and the remedies for them must be ascertained. It is often found requisite in the general practice of medicine that the numerous remedies should be collected, prepared and kept in a proper state for exhibition. This latter branch belongs to the pharmacist and is by the division of science in this country, assigned to the apothecary, while the former is reserved exclusively to the physician.

Pharmacy embraces a knowledge of the physical and chemical qualities of

medical articles, and the art of preserving, preparing and compounding them for application in practice. Of these the preparation of medicines is the most important and includes the principal operations in pharmacy. These operations require not only a knowledge of the general principles of chemistry, but also an extensive, minute and practical acquaintance with its details and manipulations. Since, then, it is committed to the apothecary to select and prepare the medicines on which the practitioner depends for his success in preserving life and restoring health; since these medicines are very various in number and quality, and require extensive and accurate knowledge for their preparation; since also they are easily sophisticated so as to destroy their efficiency without it being detected by simple inspection (thereby increasing the temptation to adulterate which arises from the competition in prices), it is at once apparent that a scientific and practical education in pharmacy is requisite, to qualify the apothecary for discharging the duties of his profession with credit to himself and with safety to the community.

In order therefore to provide the means of a systematic education; to regulate the instruction of apprentices, to promote a spirit of pharmaceutical investigation, and to diffuse information among the members of the profession; to discountenance the sale of spurious, adulterated and inferior articles; to regulate the business as far as practicable and consistent with our social institutions; to cherish habits of friendly intercourse, and in general to advance the character and interests of the profession, we the undersigned, druggists and apothecaries, agree to associate together under the following constitution, which we adopt in principle and to which we will adhere in practice.

On April 12, 1824, by-laws were adopted of which the following are worthy of being noted:

Article 3. No members shall receive an apprentice for less than five years, and it shall be obligatory upon all apprentices to attend the lectures of the College, and it was further provided that to be eligible for membership a person must have served an apprenticeship for three years with a person competent to instruct him.

September 24, 1824, it was voted to levy a fine of 25 cents on all members not present at the beginning of the meetings, and 25 cents extra on all those not present at its close.

March 16, 1825, President Elliott declined re-election as president and a letter of sympathy was sent him by the College for the affliction which caused his declination.

Trade questions obtruded themselves early into the business of the College, for on March 16, 1825, the question of a regulation of retail prices was considered and a committe was appointed to prepare a list of prices for the trade, and again on March 21, 1827, another committee for the same purpose was appointed, and another on September 16, 1829.

On March 17, 1830, the price of sulphate of quinine was fixed at two cents per grain for quantities under forty grains, and on March 16, 1831, the retail prices were again the subject of regulation, and on September 20 of that year the price of citric acid was fixed at fifty cents per ounce; sulphate of quinine at three shillings and nine pence per drachm, and bi-carbonate of soda at eight cents per ounce, and it was voted that the president inquire of the Boston Association of Physicians relative to blisters, whether the size written by them means to include the margin or otherwise.

On September 26, 1831, early closing of the shops was considered.

On March 21, 1832, a committee was appointed to investigate the retailing of medicines by wholesalers, and on September 23, 1833, another committee was appointed to revise prices. On December 18, 1833, this committee reported the price of morphia and its salts should be six cents a grain, and strychnine twelve and a half cents per grain.

December 16, 1835, another committee was appointed to revise prices, and they reported that the price of kreosote should be two cents a drop, bi-carbonate of soda six cents an ounce, Seidlitz powders fifty cents a box; Rochelle powders thirty-seven and a half cents a box and soda powders twenty-five cents a box.

Almost all the business transacted was in reference to prices, but little attention being given to the question of the education of apprentices although some effort was made for the formation of an exchange and library for the trade, and in the winter of 1826 and '27 the college secured the services of Professor John W. Webster, the Professor of Chemistry at Harvard College, to give a course of lectures before its members; and in 1830 a similar course was delivered by Martin Gay.

March 16, 1831, it was voted that the trustees may establish a School of Pharmacy and that they may nominate one or two lecturers on the sciences connected with Pharmacy.

December 17, 1835, it was voted that "apprentices belonging to members of this society shall attend Dr. Hale's lectures on Chemistry and Pharmacy once a week," but March 18, 1835, the Committe on Lectures reported that owing to the illness of Dr. Hale, the course of lectures had not commenced.

December 14, 1842, the expediency of dissolving the college was considered and on March 21, 1843, it was voted to suspend the article relating to meetings and to have but one meeting a year, and here the record closes of the early days of the College for no further meetings are made the subject of record until December 31, 1850, when a meeting was called by the secretary at the request of William A. Brewer, Thomas Restieaux and Daniel Henchman for the purpose, as stated in the call, of "reviving the Society."

At this meeting Mr. William A. Brewer was elected president of the College, and a complete reorganization was effected, with a membership of about sixty, and pharmaceutical meetings were appointed for each month.

Mr. William A. Brewer, writing from New York City in 1881 at the age of seventy-four years, in a series of interesting letters, now in the Medical Library, relating to the early history of the College and which throw interesting side-lights upon its history, says:

> It is sixty years since I entered the drug business as apprentice to the firm of Bartlett & Brewer, the junior partner being an elder brother. Its business was wholesale and retail, and they prepared everything possible for our sales in the country and town. About two years after I entered the business the conference of Dr. Ephraim Elliott and Mr. Daniel Noyes with a few of the oldest dispensing apothecaries led to the creation of the Massachusetts College of Pharmacy.

Mr. Brewer gives the most credit for the scientific character of the College to Mr. Daniel Noyes, whom he says was a graduate of Harvard and evidently by his account, one who appreciated the necessity for a systematic and thorough education of pharmacists.

April 3, 1852, the College was granted a charter by the state, and February 29, 1876, this charter was indefinitely extended.

During the winter of 1852 a course of lectures on Chemistry was given by Charles T. Jackson, M. D., and in 1853 and 1854 a course of lectures on Pharmaceutical Chemistry was given by Professor J. P. Cooke of Harvard College and in 1858 Mr. Charles T. Carney delivered a course of lectures upon Pharmaceutical Chemistry. None of the courses was largely attended and the effort to evolve a systematic course of instruction failed of any definite result, but they doubtless sowed the seed which was to bring abundant fruit in the future.

Nine years later in the spring of 1867, largely through the efforts of George F. H. Markoe, the board of trustees authorized Mr. Markoe and Mr. Henry W. Lincoln to arrange for the delivery of a course of nine free lectures upon Pharmacy, these lectures to be given by Mr. Markoe. The number of persons attending this course was twenty and its results were such that the College decided to inaugurate a systematic course of instruction in the fall of that year, and a circular was issued announcing that a course of lectures on Chemistry, Materia Medica, Botany and Pharmacy was to be inaugurated on December 11, 1867, at the rooms of the College, No. 12 Temple Place. These lectures were opened by an introductory lecture by Mr. Samuel W. Colcord, the chairman of the board of trustees. The lecturers were, for Pharmacy, George F. H. Markoe; for Chemistry, E. L. Stoddard; for Materia Medica and Botany, C. M. Tracey. The fees for the three courses were $25.

The circular announcing this important step forward in the life of the College was signed by Thomas Hollis, Henry W. Lincoln and George F. H. Markoe.

Since this time there has been no break in the instruction of the College and its history has been that of every other educational institution, with changes of its faculty and progression and development along the lines natural to such an institution.

The College has received several bequests and donations to its funds which have placed it upon a secure and safe foundation for the future, and it should become by a wise development of its resources, an institution second to none in the country and a credit even to Boston, with educational institutions of which any city might be proud.

The most important of its bequests is that known as the Warren B. Potter fund. Its history is singular in the fact that the generous donor of this fund stipulated that it should bear the name of her husband, rather than her own, another instance of self-abnegation with which the history of womankind abounds.

Warren B. Potter was a wholeale druggist of Boston, who died in the poossession of about $3,000,000. His will, after his decease, bequeathed to his wife the sum of $5000 and the income only from the remainder of his estate during her life, and no mention of the College was made in the will.

At the death of Mrs. Potter, in 1904, she bequeathed, from her savings from this income, $50,000 to the College and made it a residuary legatee, the College receiving as such the additional sum of $196,699.69, making the total amount received from this philanthropic woman $246,699.69. Because of the stipulation that the fund should bear the name of her husband, her service to the College has not met with the recognition to which she is justly entitled, and it is to be hoped that some

way may be devised to keep her name before the members of the College and before the members of the profession as one whose memory should be perpetuated, not only as a patron of the College and the profession of Pharmacy, but also as the generous friend of humanity, for her bequests to other institutions and charities mark her conspicuously as one whose noble gifts entitle her to that name.

The history of the College since 1867 has been uneventful and is marked simply by the changes which inexorable time brings to the life of every institution as well as to that of every individual. With ambition to improve the character and standards of Pharmacy and to make itself a beacon-light for the profession in America, it is assured of a glorious future and not alone of a glorious one, but what is better, one most useful to American Pharmacy and to America.

In closing I desire to acknowledge my very great appreciation of the assistance rendered me in the preparation of this study by Professor B. F. Davenport, the former Professor of Chemistry of the College, and E. H. Brigham, M. D., the Librarian of the Massachusetts Medical Society, without whose kindly and helpful aid I would have been unable to secure much of the interesting material relating to the history of the College.

THE PROBLEM OF THE MODERN DRUGGIST.

"But the fact must be faced squarely that the old use of complicated prescriptions has been greatly curtailed and that it must continue to decline. There are two ways of solving the problem of the druggist. The easiest way is for him to relegate his profession to still greater obscurity, pushing his prescription counter farther and farther to the rear, and making it smaller and smaller, giving greater and greater attention to the business of soda water, cigars, magazines, postal, express, gas, laundry and other agencies, stationery and toilet articles and the like. Some druggists have already solved the problem so satisfactorily in this way that they say openly that they do not care an obstruction to a stream of water-n, whether they get prescriptions or not. This is an undignified solution, but a few weeks of European travel rather tend to convert one to the view that the type of American drug store, with its many conveniences, is something to be retained, even with quack medicines. The latter, indeed, have a conservative value in acting as fool killers and in reducing certain patients to the point at which they are glad to accept skilled medical attendance.

"The second way of solving the problem is for the druggist to study critically the advance of medical science and art and to meet the new demands made upon him or, rather, which may be made upon him if he will prepare for them. For example, he might secure quite a little business merely by keeping track of new remedies, inquiring as to the likelihood of their use in his own community, putting thm in stock or, at least arranging for their delivery more promptly than the psysician can secure them on direct order. Co-operation would help in this regard."—*Buffalo Medical Journal.*

Reports of A. Ph. A. Committees

THE PROGRESS OF PHARMACY.

When, at the Detroit meeting in 1866, the Association honored me with election to the chairmanship of the Committee on the Progress of Pharmacy, I wondered how, without any experience in literary work, it would be possible for me to prepare an acceptable report in the light of previous reports so ably made by Procter, Parrish, Maisch, and others, and it was with no little trepidation that I began the important task thus committed to me at the first meeing of he Association which it was my privilege to attend. But it would be false modesty if I were to deny that I accomplished the allotted task to my own satisfaction; and that it was acceptable to the Association also, is shown by the fact that—no other member being at the time available—I was again entrusted with the duty of making the report on the progress of pharmacy at the following meeting in New York, in 1867.

It is thus but natural, that having made two consecutive reports I should have been looked upon, in some degree at least, as an authority and should have been frequently consulted on questions pertaining to the work of the Committee on the Progress of Pharmacy, the more particularly because of the increasing difficulty from year to year to find members competent, and if competent willing to undertake the work; and when, in 1872, the chairman of this committee, who was elected although not present, was unable to accept the task of making the report, I was prevailed upon by other members of the committee to make a "volunteer report" which was duly presented at the Richmond meeting of the Association in 1873.

At this meeting the Association decided to abolish the Committee on the Progress of Pharmacy and to appoint a reporter, whose duty it would be to make the annual reports heretofore made by that committee. Logically, the choice fell upon me to fill the newly created office, and it has so happened that with the exception of four years (1892-1895), following my resignation in 1891 by reason of impaired health, I have made the reports on the progress of pharmacy annually to the present date.

During these many years as reporter, the work of abstracting the Journals and preparing the manuscript for the printer has been done by me without assistance; and, with the primary consideration to give the rank and file of the pharmaceutical profession actually engaged in business a clear review of the more important papers that have been published in the world's periodical literature on subjects related to the professional as well as practical side of their calling, the accumulated facts were presented in a form in which they might be utilized without the necessity of referring to the original when practicable, or, when not, with sufficient explanation to justify looking up the original. For the brief reference to some newly discovered fact or observation, while in most cases sufficient to the professional man, the teacher, or the chemist, who has access to a well appointed library, is useless to the average pharmacist who probably has convenient access only to one or two journals, and whose interest may be awakened only by a more

detailed description. I conceived that what interested me, and what I could understand, would also be interesting and understood by the practical pharmacist, and this enabled me to decide what to include (and its extent) and what to omit in the report, from the many subjects that have increasingly presented themselves from year to year.

Losing sight of the main purpose of the report on the progress of pharmacy, *to present a comprehensive and orderly review of the advances made in matters related to the practice of pharmacy during certain specified periods, that would prove of the greatest value as a work of reference for future consultation or research work,* it has frequently been urged that there is too great a delay in the publication of the report, and that the information contained therein has in a certain sense become obsolete before it reaches the eye of the members through the medium of this report. It would be futile to argue with those who hold this view and do not consider its more important value as a work of reference; but it must be conceded that it is desirable to shorten the interval between the period covered by the report and the accessibility of its contents to the members of the Association. This has hitherto been impracticable for two reasons: firstly, because the labor of making the report devolved upon a single individual; and, secondly, because its prompt publication depended on the regularity with which the minutes and other matters for publication were available to the editor of the "Proceedings."

It is now confidently hoped that these untoward conditions will be remedied by the decision of the Association to publish a monthly "Journal," in lieu of the annual volume of "Proceedings," in which such interesting abstracts for the report as are available will be published in advance of the Report on the Progress of Pharmacy. This report is hereafter to be a separate publication, and by giving the reporter the assistance of a number of collaborators, of his own selection, the work of making the abstracts will be divided, and the delay in publication materially shortened. Under the new arrangement, also, the period to be covered by the report for the present year (1911) is to be extended so as to include the six months from June 30 to December 31, making a total of eighteen months, and hereafter the reports are to cover the calendar year, from January 1 to December 31 inclusive. The increased work imposed by extending the period of the report for 1911 to December 31, will necessarily cause some delay in its publication, but it may be confidently expected that the manuscript for future reports will be ready within a month or six weeks after the appearance of the last journal to be abstracted.

In conformity with the new plan I have selected a small number of abstracts which, as they will appear in the Report on the Progress of Pharmacy for the year 1911, are herewith submitted.

C. LEWIS DIEHL.

Papyrus Plants.—Indigenous Occurrence along the Cyane River in Sicily.—Dr. P. Siedler gives an interesting account of a journey to one of the few localities in which the plant producing the "papyrus" of the ancients, botanically known as *Cyperus Papyrus*, L. (*Papyrus Antiquorum*, Willd.), is still found. The plant is said to have disappeared completely from Egypt, but along the Cyane, a river which empties along with the Anapo into the basin of the "Porte Grande" of Syracuse, in Sicily, it is still found and, particularly at the headwaters, in great profusion, forming dense thickets on both sides of the river. These plants, rising from the water in straight stems to the height of five meters, are surmounted by a wealth of flowers in form of graceful plumes, and afford a novel

and magnificent feature of the landscape. The stems are blunt-three-cornered and have a circumference of about 18 Cm. at the base, tapering to the apex from which the plumes expand to the number of more than 100 rays. The boatmen illustrate the manner of making the sheets of "papyrus," by splitting sections of the stems deprived of the sheath and about 30 Cm. long into strips about 20 Mm. thick, and plaiting these strips into a mat or sheet, which when flattened out under pressure forms a sheet of papyrus suitable for receiving inscriptions or for decoration with drawings and paintings—such decorated sheets being offered for sale in the stores of Syracuse as mementos. While it is permitted to take samples of the papyrus plants, cut off above the roots, from the country, it is not permitted to take plants abroad with the living roots attached.—Pharm. Ztg. to VI (1911), No. 63, 634-63.

Derris Elliptica.—Characters of Active Constituent.—W. Lenz has extracted from the roots of *Derris Elliptica* by means of boiling benzene a crystalline principle possessing the poisonous properties of the drug, which is used in Java as an insecticide and fish-poison, and is also said to be a constituent of the Borneo arrow poison called "Siren." The new principle, for which the author proposes the name

Derrin, crystallizes from benzene in delicate, yellowish laminæ, which are rendered nearly colorless by washing with cold ether. It is obtained in colorless crystals also from its alcoholic solution; melts at about 158°, and is readily soluble in acetone, benzene (benzol) and chloroform, but difficulty in cold alcohol and cold ether.

The new substance must not be confused with "Derrid," an amosphous, resinous body isolated by Greshoff (see Proceedings 1891, 655), from the root-bark of the plant, and is described by v. Sillevoldt as a yellow powder, melting at 73°, and having an aromatic taste, followed by a benumbing sensation similar to cocaine. Arch. d. Pharm. *249* (1911), No. 4, 298-304.

Derris Stuhlmanni.—Constituents of the Root-bark.—W. Lenz records some preliminary investigations of the root-bark of *Derris Stuhlmanni* received from German East Africa where it is employed as a snake antidote both externally and per os. It yielded to petroleum ether 3% of a colorless fat of ointment consistence; then to ether 5% of a white wax-like mass, melting at 89°-90°, and evidently mainly composed of a wax-alcohol; then to alcohol 2% composed mainly of resin and wax free from tannin and sugar, but had a vanillin-like odor without, however, giving its reaction. The extracted material then yielded 10.2% of a mucilageous substance to water, consisting when completely dry of a horn-like mass, having an insipid sweet test, and containing an abundance of sugar.—Ibid, 304-305.

Digitalis Leaves.—New Researches on Glucosides.—In a preliminary article giving the results of his researches on the glucosides of digitalis leaves, Dr. F. Kraft observes that among the digitalis glucosides described by Schmiedeberg in 1875 (see Proceedings 1875, 444-447), *digitalein* was regarded as the most important, since it combined activity with water-solubility, and would therefore be a constituent of a properly-prepared infusion of the drug. Nevertheless, neither Schmiedeberg, nor later Kiliani, succeeded in preparing a chemically pure body to which the specific name "digitalein" could be applied with the assurance of uniformity in composition, activity, and chemical properties; and the same holds true of the so-called "digalen" described by Cloetta (see Proceedings 1905, 532), which must also be considered a more or less impure form of "digitalein." But, by avoiding all reagents and operations that are liable to cause its decomposition, Dr. Kraft has for several years past succeeded in preparing "digitalein" in a pure, water-soluble form, which he now describes and proposes to distinguish by naming it

Gitalin.—This, as obtained by a very simple process, described in some detail by the author, is a white amorphous powder, permanent in the air, neutral in reaction, and melting at 150°-155°. It is soluble in 600 parts of cold water and in all proportions in chloroform without undergoing change; soluble also in the other organic solvents, with exception of petroleum ether and carbon disulphide, but in these solutions, even in that of ether, it quickly undergoes change, forming a water-insoluble modification. It is obtainable also in a crystalized form, as

Gitalinhydrate; but this shows considerable variation from the original amorphous product, and melts at 75°. It is sparingly soluble in water (3000 parts) and in alcohol; but un-

der proper treatment can be dehydrated and restored to its original condition.—Schw. Wochr. f. Chem. u. Pharm. XLIX (1911), Nos. 12 and 13, 161 and 173.

Russian Opium.—Morphine Content of a Sample Cultivated at Dorpat.—J. J. Muschinski observes that although the poppy is cultivated as an oil-producing plant in the southern and western governments of Russia, experiments to obtain opium have practically been neglected, while the few endeavors that have been made (in Turkestan and Transcaucasia) resulted in the production of inferior opium, as was shown in the Russian Exhibit at Vienna in 1873. The author says that in the summer of 1910 two kinds of poppy were grown from seed in the Dorpat Botanical Garden, the one from the seeds of *Papaver Somnifer.*, L. var. *Glabrum*, Boiss, the other from the seed of the poppy commonly cultivated for its oil. Owing to unfavorable weather conditions, the experiments with the former failed; but they proved very satisfactory with the common poppy, the weather conditions being favorable during the collection of the opium, in the usual manner, by incisions. The darkened and thickened exudation when scraped into a glass dish and dried at a moderate temperature, amounted to 7.5 Gm., and had the characterstic odor, taste and color—the latter perhaps a little lighter—of commercial opium. When dried at 100°, this opium lost 11.4% of moisture, and assayed by Dietrich's mthod 12.2% of morphine.—Pharm. Ztg. (LVI, 1911), No. 60, 604; from Farmaz. Journ. Russ., 1911, 246.

Umbelliferous Fruits.—Content of Fixed Oil and Its Character—Dr. Clemmens Grimme has made some interesting investigations concerning the fixed oil content of umbelliferous fruits which in the industrial distillation of volatile oils are not taken into account and are usually included in the still residues which are utilized either in the moist or dried condition for agricultural purposes, as cattle food, etc. The fixed oils were prepared from the best known of the umbelliferous fruits by extracting them with ether, and after distilling off the solvent heating the residue to drive off the volatile oil as completely as practicable. This treatment did not deprive the residual fixed oil completely of the odor of volatile oil, which, however, was due to mere traces of the latter and did not interfere with the determination of the physical and chemical characters and constants. They were usually dark-colored liquids, having an aromatic taste and odor, variable congealing points, and were obtained in a yield of from 10 to 18 percent—a yield that would seem to justify the assumption that, considering the enormous quantities of these fruits that are modernly subjected to distillation, it might prove quite profitable to separate the fixed oil from the still residues which would remain after suitable treatment for this purpose, quite as valuable for the purposes of cattle-food. The fruits that have been examined by the author are the following: *Carum Carvi*, L.; *Petroselinum sativum*, Hoffm.; *Apium graveolens*, L.; *Pimpinella Anisum*, L.; *Daucus Carota*, L.; *Foeniculum Officinale*, L.; *Anethum graveolens*, L.; *Cuminum Cyminum*, L.; *Anthericus Cerefolium*, Hoffm.; *Coriandrum sativum*, L.; and *Ptychotis Ajowan*, D. C.—Pharm. Zeutralh. LII (1911), No. 25, 661-667.

Licorice.—Cultivation in Moravia.—Prof. W. Mitlacher gives some interesting information concerning the cultivation of the licorice plant in the Austrian province of Moravia, where it is conducted on an extensive scale on the southern declivities of the hills encompassing the Thaja River, in the loose, sandy soil that is equally adapted to grape culture. In fact, the two crops are periodically alternated in some sections. The fields are planted with sections of runners about the thickness of a finger and 30 Cm. in length, in a slanting or horizontal position, about ½ M. apart and to a depth of about 30 Cm., and then covered with soil. The plantation is then left practically without attention for four years, the time required for the maturing of the crop; the only attention given being the occasional loosening of the soil, and the removal of weeds or of unhealthy plants. During the first years the plants only produce thin switches, which in the following years, however, develop into strong densely foliated stems and reach their maturity in the fourth year, when the crop of licorice root is collected. From the root-stocks and the runners remaining in the ground, new plants are then produced, reaching as before their maturity in four years, so that crops of roots are obtained in a number of successive periods of four years each, depending on the fertility of the soil, aided at

the beginning of each period with the application of manure, until the soil is practically exhausted. The planting may be done during the first half of April or in the fall of the year; the harvest begins in September and continues until the middle of March. The product, consisting of handsome thick roots and runners, commercially designated as "roots," is light-yellow in transverse section and has a pure sweet taste, while an inferior product, composed of the shoots of the subterraneous stem and small runners, is used for the purpose of making licorice paste, which is also made largely in Moravia from the better "roots."—Pharm. Ztg. LVI (1911), No. 57, 576; from Pharm. Praxis., 1911, No. 6.

Matricaria Discoides, D. C.—Increase of this American Species in Europe.—Schimmel & Co. mention that *Matricaria discoides, D. C.*, a plant resembling German Chamomile, but smaller and particularly differing in having much smaller marginal flowers, has acclimated itself in Europe with surprising rapidity since it was introduced from North America about the middle of the nineteenth century. It is very common, for example, in Würtemberg and in many parts of Alsace-Lorraine, in particular in the neighborhood of railway stations, and has also been observed in the vicinity of Leipzig, where Schimmel & Co. have ecaused a small quantity to be collected for distilling purposes. From the entire plant, all parts of which appear to contain volatile oil, they obtained 0.15% of a dark brown oil, studded with paraffin crystals when at ordinary temperature. Its odor is intermediate between that of common and Roman chamomile oil; sp. gr. at 30°, 0.9175; acid val., 18.7; ester val., 77.5. On account of its fairly considerable paraffin-content the oil did not form a clear solution even with 90% alcohol. The separated paraffin, recrystallized twice from dilute alcohol, melted between 58° and 61°.—Schimmel's Rep., Oct., 1911, 107.

Wax Oil.—Composition.—Th. Ekecrantz and E. Lundström have made an interesting investigation to determine the composition of Wax Oil, an obsolete preparation which under the name *Oleum Cerae* was formerly official in many of the European pharmacopœias and is still employed externally as a remedial agent. Practically nothing is known regarding its components, and the little that is published in the literature refers to a product that is obtained by dry distillation either from the beeswax direct or in admixture with indifferent substances—such as sand or brick dust, whereas the commercial wax oil is at the present time always prepared by the dry distillation of the wax with burnt lime. Obviously, the products obtained by the latter method must differ in composition from those obtained by the direct distillation of the wax, and the authors therefore prepared the wax oil for their examination by subjecting beeswax of assured purity to distillation three times, with twice its weight of lime, obtaining thus about 67.5% of a brown-yellow oil, which gradually congealed into a grey-yellow mass, interspersed with crystalline leaflets. This yielded when distilled with steam about 50% of a mobile, yellow-green liquid of sp. gr. 0.7825, having pronouncedly the odor of the wax oil, and consisting of a mixture of saturated hydrocarbons. The portion of the wax oil not volatilized by the steam consisted preponderously of "nonokosan," $C_{29}H_{60}$, which is probably produced by the oxidation of the myricyl alcohol of the wax to the corresponding acid and the subsequent splitting off of carbon dioxide. The valuation of a sample of wax oil may properly depend on the following constants: Specific gravity, 0.790 to 0.792; acid number, between 8 and 12; iodine number, between 80 and 90.—Archiv. d. Phar. 248 (1910), No. 7, 500-513.

Paraldehyde, G. P. V.—Contradictory Requirements.—R. Richter points out that while the new German Pharmacopœia admits the presence of 4% of acetaldehyde in paraldehyde, which must be otherwise free from contaminants, the constants and tests given apply to pure paraldehyde. Thus, the specific gravity at 15° is given at 0.998-1000, the boiling point at 123°-125°, while the congealing point has been lowered (from the M. P. 10.5 given in the G. P. IV) to 6.5°. The author finds, however, that otherwise pure paraldehyde, containing 4% of acetaldehyde, has a sp. gr. at 15° of 0.993, this being due to the much lower specific gravity (0.7876) of the contaminant; and that, although the congealing point of such a mixture is 6.50, on distillation about 54% distil over before the temperature has risen to 122.7°, the remainder (46%) passing over between 122.7° and 124.2°. It is somewhat problematical whether it is the pharmacopœial intent that paraldehyde *shall* or that it *may* contain 4% of acetaldehyde; but the author can see no reason for its presence, since it can easily be

removed from the commercial product by fractionation. Indeed, he is of the opinion that its presence is liable to produce untoward by-effects, this opinion being warranted by his experience in the treatment of the insane with paraldehyde in a prominent German asylum. He therefore concludes that acetaldehyde should be excluded from paraldehyde as far as possible by observing the following requirements: 1. Specific gravity as high as possible, preferably within the limits of the G. P. V. 2. Boiling point conforming practically with the G. P. V. 3. Congealing point from 10°-12°. 4. Quantitative determination of *metaldehyde*, which is always liable to be formed during the spontaneous conversion of paraldehyde into acetaldehyde. This is accomplished by evaporating 10 Gm. of the paraldehyde at a low temperature. In all other respects the tests of the G P. V. will suffice.—Pharm. Ztg. LVI (1911), No. 53, 536-538.

Cantharidin.—Quantitative Determination in Cantharides and the Tincture.—The "Hagen-Buchholz Prize" of 1909-10 for the best essay on the subject of "A Comparative Examination of the Methods which have been proposed for the estimation of free and combined cantharidin in Cantharides and Tincture of Cantharides," has been awarded by the German Apothecaries Society to three papers, contributed by A. Kneip, N. Ney and F. Reimers, respectively, a symposium of which is published in the Archiv. der Pharmazie. From this, it appears that by experimentation with the various published processes, as well by processes of their own these three authors have reached results which differ very decidedly from each other. Ney recommends the method of Panchaud as modified by Siegfried, with some modifications of his own, and Reimers recommends the method of the Pharm. Germ. as modified by Fromme. Both of these methods depend on the use of chloroform for the extraction of the cantharidin after certain preliminary treatment with acids—the one sulphuric, the other hydrochloric acid. Kneip, on the other hand, recommends a method of his own, in which, after acidification of the powdered cantharides with alcoholic hydrochloric acid (25% HCl), they are extracted with a mixture of 30 parts of petroleum ether and 50 parts of benzol. Both Kneip and Reimers also determined the water-content in the drug and the ash (found by Kneip to be 7.45-11.58% and 5.54-6.99%, respectively), and Reimers also determined the percentage of fat in the sample. The results obtained by the three authors are exhibited in the following:

	Ney	Kneip
Total Cantharidin	0.885%	0.918%
Free Cantharidin	0.580%	0.730%
Combined Cantharidin....	0.305%	0.188%

	Reimers (3 Samples)		
Total Cantharadin	0.878%	0.889%	0.809%

For the details of these highly interesting papers (and the various processes experimented with) the original "symposium" must be consulted in Arch. d. Pharm *249* (1911), No. 4, 259-285.

Tincture of Cantharides.—Quantitative Estimation of Cantharidin.—Dr. R. Gaze recommends the following method for the quantitative estimation of Cantharidin in Tincture of Cantharides: 50 Cc. of the tincture, 25 Cc. of water and 1 Cc. of solution of sodium carbonate (1:2), are evaporated to dryness on a water bath; the residue is dissolved in 10 Cc. of water, 2 Cc. of hydrochloric acid (25%) are added, and the mixture is transferred and rinsed into a separatory funnel, in which it is shaken out consecutively with 10, 5, 5 and 5 Cc. of chloroform. The chloroformic solution and washings are evaporated to dryness in the flask in which they have been collected, on a water bath, and finally with the aid of a bellows, and after standing twelve hours the dry residue is washed consecutively with 10, 5, 5, 5 and 5 Cc. of petroleum ether, the fractions being decanted through a small filter. The washed contents of the flask and the filter are allowed to become air-dry, then washed first with 10 Cc. of water containing one drop of ammonium carbonate solution, followed by pure water—and dried at 50° C. The residue in the flask is now dissolved in a little acetone, the solution filtered through the washed and dried filter into a weighing flask, the flask and filter being washed quantitatively with sufficient acetone. The acetone solution is evaporated at a gentle heat, finally with the aid of bellows, and the brownish-yellow residue in the weighing flask is then heated at 50° in the water-oven to constant weight.

The method under certain preliminary modifications is also applicable to the determination of Cantharidin in "Oleum Cantharidum," but the details must be consulted in the origi-

nal paper.—Apoth. Ztg. XXVI (1911), No. 34, 332-333.

Extracts of Belladonna and Hyoscyamus.—Superiority of the Alcoholic Extract from the Dried Drugs.—The new German Pharmacopœia (V) having, in conformity with the "Protocol" adopted by the International Pharmaceutical Congress at Brussels, dismissed the extracts of belladonna and hyoscyamus prepared from the fresh plants and replaced them with extracts prepared from the dried leaves of the plants, by percolation with 70% alcohol, P. W. Danckworth has made a series of experiments in order to ascertain the relative value of the two methods of preparation, as well as the advantage, if any, of using only the leaves instead of the whole herbaceous portion. Extracts were accordingly prepared from fresh herb and leaves by the process of the G. P. IV, and from the dried herb and leaves by process of percolation directed in the "Brussels Protocol," the material being of the identical harvest, and the resulting extracts adjusted so as to retain 15% of water. Referring to the original paper for the details of these experiments, the result in the case of *Belladonna* may be condensed as follows:

1. The leaves contain less alkaloid than the entire herb.

2. By percolation of the dried drug with 70% alcohol the yield of extract is not only larger, but the alkaloidal content is also greater than in the extract made from the fresh drug.

3. The extract obtained by percolation from the dried herb contains more alkaloid than that obtained from the dried leaves, but the yield of extract from the leaves is greater.

4. The international requirement that the extract shall retain only 10% of water should be changed to 15%.

It is of practical interest that the yields of extract, containing 15% of water, when calculated for the fresh herb and leaves respectively, was as follows:

Herb: Fresh, 1.88% (=1.699% alkaloid); dried, 3.97% (=1.917% alkaloid).

Leaves: Fresh, 2,02 (=1.207% alkaloid); dried, 5.38% (=1.282% alkaloid).

The actual yield from the dried material was: From herb, 31.30%; from leaves, 29.88%. If the chlorophll is filtered out after distilling the alcohol from the percolate, these quantities are reduced to 26.6% and 25.55% respectively, the percentage of alkaloid being correspondingly increased.

Similar results were obtained with Hyoscyamus leaves and herb, but these were confined to a single specimen each of the herb and dried leaves.—Arch. d. Pharm. *249* (1911), No. 4, 247-253.

ENTHUSIASM.

Enthusiasm is that life spark that comes into vital contact with the hearts of men and which influences them in a way that promotes the greatest activity and devotion to a cause.

Cold, perfunctory work, no matter how intrinsically valuable, fails to obtain the psychological results that are so important in carrying any movement or project through to success, especially if either are dependent for success upon the united action and support of any considerable body of men.

In N. A. R. D. work enthusiasm has been the cement that has bound leader to leader and worker to worker and has imbued the N. A. R. D. gospel with the fervor of trade and professional philosophy and religion, making it a cause worth planning for, fighting for and sacrificing for.

When we look around us we find that successful business establishments are alive with enthusiasm and are working to achieve certain business ideals. Principle is the foundation of their enthusiasm and activity.—*N. A. R. D. Notes.*

REPORT OF THE COMMITTEE ON UNOFFICIAL STANDARDS.

The following portion of the report of the Committee on Unofficial Standards relates to certain crude drugs and chemicals suggested for inclusion in the next revision of the National Formulary, and by order of the Council is published in the JOURNAL in order to afford opportunity for discussion before the standards proposed are finally adopted.

Manufacturers, importers, analysts, and others interested in any of the proposed standards, are requested to send their criticisms and comments to the chairman of the committee, Geo. M. Beringer, 501 Federal St., Camden, N. J.

APPROVED MONOGRAPHS SUBMITTED AS STANDARDS FOR UNOFFICIAL DRUGS AND CHEMICAL PRODUCTS.

ABSINTHIUM.

WORMWOOD.

Maderwort. Wermuth or Vermuth.

The dried leaves and tops of *Artemisia Absinthium* Linné (Fam. *Compositae*).

Gray-green and finely silky-hairy and glandular throughout; largest leaves reaching 10 or 12 cm. in length and of nearly equal breadth, on long petioles, the blades roundish-triangular in general outline but three times pinnately lobed or divided, the ultimate segments oblong or obovate obtuse, entire or slightly toothed; upper leaves becoming shorter petioled, smaller and narrower, the uppermost being only about 2 cm. long and resembling the ultimate segments of the larger ones; heads racemose-panniculate drooping on short peduncles, greenish-yellow, 3 to 4 mm. broad, round-ovoid, the outer bracts linear-oblanceolate,, obtuse, the inner broader and scarious-margined; receptable hairy; outer flowers sometimes sterile. Strongly and characteristically aromatic and very bitter.

On extraction with ether the air-dried leaves should not yield less than 1 per cent of a disagreeably bitter oil, soluble in alcohol, and of a taste closely resembling that of the drug. The ash content should not exceed 10 per cent.

ACONITI FOLITA.

ACONITE LEAVES.

Monkshood Leaves. Wolfsbane Leaves.

The dried leaves of *Aconitum Napellus* Linné. (Fam. *Ranunculaceae*).

Leaves orbicular-cordate in outline, long-petiolate, palmately divided, usually into three or five segments, the sinuses extending almost or quite to the petiole and each segment subdivided into several linear, acute divisions, the lower lobes longest and somewhat spreading.

Aconite Leaves should be stored in a dry place in a closed can or bottle and should not be used if they fail to respond to the following test.—1 Gm. of the finely pulverized leaf is infused with 30 Cc. of warm distilled water and when cold strained. When the mouth is rinsed with a small portion of this strained liquid it should produce the characteristic tingling and benumbing sensation of aconitine.

When assayed by the method for assaying Aconite official in the U. S. P. VIII it should yield not less than 0.2 per cent of alkaloids.

Upon incineration Aconite Leaves should yield not over 16 per cent of ash.

ADONIS.

ADONIS.

False Hellebore. Pheasant's-eye.

The dried herbage of *Adonis vernalis* Linné (Fam. *Ranunculaceae*). Glabrous, with the exception of the younger portions, which may be slightly grayish-puberulent; stems 1.5 to 5 dm. long, thick, but soft and weak, shining, simple or branched, the branches mostly from near the base and similar to the main stem; naked below, except for some scale-like leaf-vestiges, densely leafy above; leaves 2 to 4 cm. long and two-thirds or more as broad, pinnately divided into several segments, the larger of which are again divided, the ulti-

mate segments being narrowly linear and acute; flowers terminal, yellow but usually drying to a whitish color, 3 to 6 cm. broad; sepals 5, green or grayish-puberulent, rather more than half the lengths of the petals, oblong, obtuse, finely nerved; stamens indefinite; pistils numerous, in fruit forming an ovoid, obtuse, dense head of ovoid akenes, which are tipped with the very small persistent styles. Odor indefinite. Taste bitterish, afterward somewhat acrid

Upon incineration Adonis should yield not more than 12 per cent of a white ash which should be almost entirely soluble in hydrochloric acid.

FOLIA ALTHAEAE.

ALTHAEA LEAVES.

Marshmallow Leaves.

The dried leaves of *Althaea officinals* L. (Fam. *Malvaceae*) containing not more than five per cent of stems or foreign material.

Gray-green or yellowish gray-green and densely and finely tomentose throughout; petioles 1/6 to 1/3 as long as the blades; blades varying from 5 to 15 cm. in length and from 3 to 10 cm. in breadth, ovate or rhomboidal ovate in outline, rounded or occasionally nearly truncate at the base, acute at the summit; margin doubly serrate-dentate, the principal teeth from one to three pairs, the lowest almost large enough to be regarded as lobes, the secondary very irregular, triangulate, acute, broader than long, the sinuses acute; two to four or occasionally six principal veins originating with the midrib in the petiole, prominent underneath, terete; branches of the midrib arising at a wide angle, nearly straight, each terminating in a marginal tooth. Leaf, thin, but appearing thick by its hairy covering. Odor slight and scarcely characteristic. Taste mucilaginous. Upon incineration the ash should not exceed 15 per cent.

AMMONII HYPOPHOSPHIS.

AMMONIUM HYPOPHOSPHITE.

It should contain not less than 97.5 per cent of pure Ammonium Hypophosphite ($NH_4PH_2O_2 = 83.06$). It should be kept in well-stoppered bottles.

Deliquiescent, colorless, hexagonal plates, odorless, having a saline and bitter taste.

Soluble in one part of water at 25° C., and in 14.5 parts of alcohol at 25° C.; very soluble in boiling water or boiling alcohol.

When heated in a test tube, the salt is decomposed, with the evolution of hydrogen phosphide, which is spontaneously inflammable.

The aqueous solution is neutral to litmus paper and when heated with potassium hydrate gives off ammonia vapors.

The aqueous solution, slightly acidulated with sulphuric acid, yields with silver nitrate, T. S. a white precipitate, which rapidly turns brown or black, owing to separation of metallic silver.

The aqueous solution, slightly acidulated with sulphuric acid, yields, on heating with copper sulphate T. S., a reddish-brown precipitate.

It should not respond to the U. S. P. time limit test for heavy metals when 10 Cc. of the solution (1 to 20) is acidulated with 1 Cc. of diluted hydrochloric acid and tested as directed by the U. S. P., the total dilution for arsenic and antimony being 1 in 40, for iron 1 in 300, for other metals 1 in 100. (By total dilution is meant the dilution after addition of the hydrogen sulphide solution).

If 10 Cc. of the aqueous solution (1 in 20) be measured into a beaker containing 3Cc. of nitric acid and the mixture evaporated to dryness on a waterbath, the residue should not respond to the U. S. P. modified Gutzeit test for arsenic.

The aqueous solution (1 in 20) should remain clear five minutes after the addition of about 5 Cc. ammonium oxalate T. S., and a few drops of ammonia water (absence of calcium salts).

Assay.—Introduce into a stoppered weighing bottle about 0.1 Gm. of ammonium hypophosphite, previously dried at a temperature not exceeding 100° C., and weigh accurately. Dissolve it in 100 cc. of diluted sulphuric acid, add 50 cc. of tenth-normal potassium permanganate V. S. and boil 15 minutes Add 5 Cc. of tenth-normal oxalic acid V. S. and heat until the precipitate, which has been produced is dissolved. Then titrate the excess of oxalic acid with tenth-normal potassium permanganate V. S. From the total number of Cc. of tenth-normal potassium permanganate V. S. subtract the number of Cc. of tenth-normal oxalic acid V. S., multiply the remainder by 0.2076 and divide the product by the weight of ammonium hypophosphite taken. The quotient represents the percentage of actual ammonium hypophosphite present. (Each Cc. of tenth-normal potasium perman-

ganate V. S. corresponds to 0.002076 Gm. of ammonium hypophosphite).

METHOD FOR THE DETERMINATION OF AMMONIA.

Weigh accurately 2.4 gm.. of the ammonium salt in a glass tube about 3 cm. long and about 1 cm. wide. Place a distilling flask of about 1 liter capacity, containing 300 Cc. water on wire-gauze, and connect it, by means of a glass tube bent at an obtuse angle, with the glass tube of a small condenser. Insert the lower end of this tube in an Erlenmeyer flask of about 700 cc. capacity, containing 50 Cc. tenth-normal sulphuric or hydrochloric acid V. S., so that the tube is below the surface of the liquid. Introduce also a few drops of alizarin red test solution (1%) into the receiver.

Now, put the unstoppered tube, containing the ammonium hypophosphite, into the distilling flask, then add 10 Cc. of 10% sodium hydroxide solution at once, connect with the condenser, and heat the contents of the flask to vigorous boiling and continue the application of the same degree of heat for about one-half hour, or until the distillate fails to color litmus paper blue. During the last fifteen minutes of boiling the lower end of the condenser need not be below the surface of the liquid in the Erlenmeyer flask.

Titrate with tenth-normal potassium hydrate U. S. Multiply the number of cc's of tenth-normal sulphuric acid U. S. consumed by the distillate by the respective factor, and divide this product by the weight of the ammonium salt taken. The quotient represents the percentage of actual ammonium salt.

ANETHOL.

ANETHOL.

$C_{10}H_{12}$=148.10.

The methyl ether of Para-Propenyl phenol (C_3H_5, C_6H_4, O CH_3) constituting the main constituent in oils of anise, star anise and fennel and obtained by fractioning, chilling and crystallizing. It should be kept in well stoppered amber colored bottles protected from light and air.

At ordinary temperatures anethol is a colorless or faintly yellow highly refractive liquid having a sweet taste and the aromatic odor of anise.

At +20 to +21° C. it solidifies to a white glistening crystalline mass which melts at 22° to 23° C.

Specific gravity 0.984 to 0.986 at 25° C.

Boiling point 232° to 234° C.

Its refractive index is 1.56 at 20° C.

It should be optically inactive or show a deviation of not over 0.08° in 100 mm. tube at 25° C. due to slight traces of the oil from which the anethol has been prepared (If from anise oil this deviation will be laevogyrate, if from fennel oil dextrogyrate).

Anethol is almost insoluble in water, readily soluble in ether or chloform, and makes a clear solution with two volumes of alcohol.

If 10 cc. of anethol be shaken with 50 cc. of saturated solution of sodium bisulphite in a graduated cylinder and allowed to stand for six hours it should show no appreciable diminution in its volume nor should a crystalline deposit separate (absence of aldehydes).

RADIX ANGELICAE.

ANGELICA ROOT.

Garden Angelica.

The rhizome and roots of *Angelica Archangelica* Linné. (Fam. *Umbelliferae*).

Rhizomes short and thick, 5 cm. to 10 cm long, frequently crowned with the bases of stem and leaves, sometimes split, the roots are numerous, 10 to 20 cm. in length, 5 to 7 mm. thick at the base and gradually tapering to about 1 mm., frequently twisted or braided together, externally dark grey-brown to reddish or purplish-brown and with conspicuous rather deep furrows, when dry breaking with a smooth fracture.

On cross section the rhizome shows a distinct pith which is absent in the root and both exhibit a spongy bark nearly or quite as wide as the woody zone, in which are radial rows of brownish ducts containing oleoresin. The large diameter of these secretion vessels is characteristic, as they measure about 200 microns. The wood rays are finely porous and narrower than the medullary rays. The bark is rich in starch.

Insect eaten or mildewed roots should be rejected.

Angelica root has a strongly aromatic odor and a sweetish, pungent aromatic, followed by a bitter taste.

Upon incineration Angelica Root should yield not over 8 per cent of ash.

FRUCTUS ANGELICAE.

ANGELICA SEED.

The ripe fruit of *Angelica Archangelica* Linné (Fam. *Umbelliferae*).

From 4 to 8 mm. broad and 1 to 2 mm. thick, oval, the base faintly notched, the sum-

mit bearing 5 minute calyx-teeth and the remains of the style; of a pale yellowish-brown color; consisting of two mericarps joined by their broad faces, or separate mericarps each nearly flat upon one surface, which bears a central longitudinal groove and has sharp, slightly upturned margins, convex upon the other surface, which is traversed longitudinally upon the back by 3 strong ribs, separated from one another by narrow grooves and from the margin by much broader grooves; pericarp soft, rather tough and corky, showing 6 large oil-tubes on cross section, and enclosing a single seed. Odor characteristic and agreeable; taste aromatic, pungent and sweetish.

Upon incineration Angelica Seed should yield not more than 8 per cent of ash.

SEMEN ARECAE.

ARECA.

The ripe seed of *Areca catechu* Linné (Fam. *Palmae*), yielding when assayed by the process given below not less than 0.5 per cent of Areca alkaloids.

From 20 to 25 mm. long, conical, grayish-brown with numerous spiral, reddish, depressed veins running chiefly from the hilum; hard; heavy; odorless, or faintly aromatic when broken; taste astringent, bitter and slightly acrid. A transverse section exhibits a marbled appearance, dark brown lines alternating with white portions, the former being folds of the seed coat, and the latter the endosperm.

Upon ignition Areca should yield not over 3 per cent of ash.

ASSAY OF ARECA.

Areca, in No. 60 powder, *fifteen grammes*	15 Gm.
Chloroform, *one hundred and fifty cubic centimeters*	150 Cc.
Ether, *thirty-five cubic centimeters.*	35 Cc.
Ammonia Water, *ten cubic centimeters*	10 Cc.
Distilled Water, *fifteen cubic centimeters*	15 Cc.
Fiftieth-Normal Hydrochloric Acid, Haematoxylin Test Solution, each	*a sufficient quantity.*

Place the Areca in a 250 Cc. Erlenmeyer flask and add 150 Cc. of a mixture composed of 1 volume of chloroform and 4 volumes of ether, the mixture having been cooled to 20° C before measuring. Stopper the flask securely, and let it stand ten minutes. Add 10 Cc. of ammonia water and shake the flask vigorously every 10 minutes for two hours. Add 15 Cc. of water, agitate, and place the flask in water at 20° C. for 15 minutes. Pour 100 Cc. of the clear liquid, representing 10 Gm. of Areca, through a dry filter into a graduated cylinder, transfer the solution to a 250 Cc. Ehrlenmeyer flask, wash the filter and graduated cylinder with the 10 cc. of the chloroform-ether mixture, adding the washings to the measured solution, evaporate or distil off the solvent and dissolve the residue in 5 Cc. of absolute alcohol. Add 30 Cc. of ether, 10 Cc. of water and 5 drops of haematoxylin test solution to the solution, and titrate with fiftieth-normal hydrochloric acid V. S. until the water solution is of a reddish-brown color. Add 30 Cc. of water and continue the titration until the aqueous layer becomes of a citron-yellow color or until further addition of acid fails to clarify the liquid. Each Cc. of fiftieth-normal hydrochloric acid V. S. consumed is assumed as equivalent to 0.0031 Gm. of the mixed alkaloids of Areca.

RADIX ARNICAE.

ARNICA ROOT.

Arnica Rhizome. Mountain Tobacco. Leopard's Bane.

The dried rhizome and roots of *Arnica montana* Linné (Fam. *Compositae*).

From 4 to 10 cm. long and 3 to 5 mm. thick; of oblique growth, usually curved at the upper end, cylindraceous, annulate with leafy scars, usually bearing some remains of leaf and stem bases, and with numerous rather coarse roots on the inferior surface; externally dark reddish-brown, internally whitish; rather tough, the transverse section displaying a thick bark, short yellow wood wedges and a large spongy pith, the inner bark containing a circle of rather large resin cells. Odor characteristic. Taste pungent and bitter, afterward somewhat acrid.

Upon incineration Arnica Root should yield not over 12 per cent of ash.

ASCLEPIAS.

PLEURISY ROOT.

Butterfly Weed. Orange or Yellow Milk Weed. White Root.

The dried root of *Asclepias tuberosa* Linné (Fam. *Asclepiadaceae*).

Irregularly broken or transversely or longitudinally sliced pieces of an irregularly or

interruptedly fusiform root from 10 to 20 cm. long and about 1 to 3 cm. thick; externally varying from orange when fresh, to dull yellowish-gray when old, and more or less annulate and finely longitudinally wrinkled; longitudinally sliced surfaces yellowish-white concave, the upcurved edges rather sharp; fracture short; rough-granular yellowish or grayish-white, starchy, the outer layer of the thin bark yellow or orange, the wood wedges yellow. Nearly odorless and of a disagreeable, bitterish and somewhat acrid taste. Upon incineration Asclepias should yield not more than 9 per cent of ash.

BOLDO.

BOLDO LEAVES.

The leaves of *Peumis Boldus* Mol. (Fam. *Monimiaceae*).

From 1.5 to 2.5 cm. long by 1 to 1.75 cm. broad, the petiole 1 to 3 mm. long, stout and rigid; broadly ovate or oval, the base varying from rounded to very slightly indented, the summit rounded or slightly notched, the margin entire and sharply revolute; thick, coriaceous, rigid and brittle, from pale-green to brownish-green, pappillose roughened on both surfaces, the principal veins coarsely reticulate, impressed above, sharply prominent underneath; odor peculiar, when crushed very strong, disagreeable and somewhat like that of oil of chenopodium; taste bitter, warm and pungent, peculiar, somewhat camphoraceous and slightly terebinthinate.

Under the microscope a transverse section shows a well marked hypoderm from which develop papilla-like excrescences, each crowned with a group of radiating one-celled thick-walled hairs. Those on the lower surface being somewhat smaller. Stomata numerous on the lower surface. The mesophyl contains numerous oil secretion cells.

Upon incineration Boldo should yield not over 10 per cent of ash.

BROMAURIC ACID.

Bromauric Acid $Au\ Br_3H\ Br + 5\ H_2O$ = 607.97 representing 71.8 per cent of its weight of the true gold tribromide $Au\ Br_3$ = 436.96. It should be kept in glass stoppered amber colored vials.

Bromauric acid is used in commerce to take the place of Gold Tribromide, because it is very stable and more easily obtained.

Dark red-brown, flat needle shaped crystals or irregular coarse granular masses, odorless, having a metallic and acid taste. Permanent in the air when quite pure, but deliquescent when chloride is present.

It melts, when pure, at 27° C.

Very soluble in water and in alcohol.

If the metallic gold obtained by igniting 0.1 gm. of bromauric acid be heated with 5 c. c. nitric acid, and the acid solution diluted and filtered, no weighable residue should remain after evaporation and ignition.

The aqueous solution has a strongly acid reaction and yields with silver nitrate T. S. a yellowish white precipitate, insoluble in nitric acid, slightly soluble in ammonia water.

If 0.2 Gm. of Bromauric Acid be dissolved in 10 Cc. of water, 16 Cc. oft tenth-normal ver nitrate V. S. and 12 Cc. of ammonium carbonate T. S. added, the mixture digested 10 minutes on a waterbath, then cooled and filtered, the filtrate, on supersaturating with nitric acid, should not become more than slightly opalescent (limit of chloride).

When exposed to a red heat, it is decomposed, and should leave a residue of metallic gold equal to 32.43 per cent.

CACAO PREPARATA.

COCOA—CACAO.

A powder prepared from the roasted, cured kernels of the ripe seeds of *Theobroma Cacao* Linné, or of other species of *Theobroma* (Fam. *Sterculiaceae*) deprived of a portion of their fat.

A brownish powder having a chocolate-like odor and taste, free from sweetness.

When extracted with cold water, cocoa should yield not less than 14 per cent nor more than 22 per cent of soluble matter.

When extracted with ether, cocoa should yield not less than 18 per cent of fat, and the fatty residue should not have a spicy odor or taste.

The residue, after extraction with ether, when examined under the microscope should not show more than traces of cacao shells, and should show no foreign starch granules or other foreign substances.

Upon incineration Cocoa should yield not less than 3.5 per cent nor more than 8 per cent of ash, which should not have a distinctly reddish color.

CACTUS GRANDIFLORUS.

CACTUS GRANDIFLORUS. CEREUS GRANDIFLORUS.

Synonyms: Night-blooming Cereus; Queen of a Single Night; Large Flowered Cactus; Sweet Scented Cactus; Vanilla Cactus.

The fresh, succulent stems of the *wild*

growing Cactus grandiflorus Linné (*Cereus grandiflorus* Miller), Fam. *Cactaceae*, a green climber indigenous to the West Indies and Mexico. Cactus grandiflorus as collected from the growing plant is usually preserved in alcohol and in this form the medicinal article commonly enters the trade. The amount of added alcohol should be stated on the label. Cactus cultivated in houses should not be used medicinally.

Stems in pieces of varying length, about 1.5 to 2 cm. in diameter cylindrical, but with 5 to 7 angles, along which at intervals of abouut 2 cm. there are small tufts of 6 to 8 spines about 2mm. long, and at irregular intervals of about 5 to 15 cm. there is a branched root.

The transverse section presents a central woody ring about 3mm. in diameter. The remainder of the stem presents a spongy parenchyma with numerous large crystals or "sphaeraphides" therein.

The fresh stems are very succulent, and lose upon drying about 95 per cent of their weight.

When bruised Cactus Grandiflorus has a strong, herby odor, an insipid, acidulous taste and is mucilaginous to the touch.

The sliced stems color alcohol green.

The fresh juice has an acid reaction.

CALCII DIOXIDUM.

CALCIUM DIOXIDE.

(Calcium Peroxide)

A partly hydrated form of calcium dioxide (CaO_2), containing not less than 60 per cent of pure calcium dioxide when estimated by the method given below.

A grayish-white or yellowish-white powder, slightly soluble in water and readily soluble in diluted acids, except sulphuric, with the formation of hydrogen dioxide.

A solution of 0.1 Gm. of calcium dioxide in 5Cc. of diluted hydrochloric acid, to which 0.1 Gm. of ammonium chloride has been added and then rendered slightly alkaline with ammonia water, yields a dense white precipitate with amonium oxalate T. S. (presence of *calcium*).

QUANTATATIVE ESTIMATION OF CALCIUM DIOXIDE.

Agitate about 0.2 Gm. of calcium dioxide with 25 Cc. of water and dissolve the substance by the addition of 25 Cc. of diluted hydrochloric acid (1 in 5). Then add gradually from a burette, tenth-normal potassium permanganate V. S. until a permanent color remains after agitation. Multiply the number of Cc. of tenth-normal potassium permanganate V. S. consumed, by 0.003578, and divide this product by the weight of calcium peroxide taken; the result multiplied by 100 represents the percentage of pure calcium peroxide present.

CALCII LACTAS.

CALCIUM LACTATAE.

$Ca\ (C_3H_5O_3)_2\ 5\ H_2O = 236.19.$

It should contain not less than 98 per cent of pure calcium lactate.

White granular masses or a white crystalline powder, odorless, with a slight chalky taste.

Soluble in 10 parts of cold water when freshly prepared. Freely soluble in alcohol. The solubility is lessened with age.

When heated to 100° C. the salt loses all its water of crystallization; on ignition at a red heat it decomposes and a residue of calcium oxide remains.

An aqueous solution of the salt is neutral to litmus paper.

The aqueous solution of the salt (1 in 20) yields with ammonium oxalate T. S. a white precipitate, insoluble in acetic acid but soluble in hydrochloric acid.

On adding potassium permanganate to a mixture of calcium lactate and sulphuric acid and gently heating, the odor of aldehyde will become perceptible.

If one gramme of calcium lactate be added to 20 c. c. of water a clear, colorless solution should result. (Absence of insoluble impurities).

The aqueous solution (1 in 20) slightly acidulated with hydrochloric acid should not repond to the U. S. P. time limit test for heavy metals.

The aqueous solution (1 in 20) should not be rendered more than faintly turbid by barium chloride T. S. (limit of Sulphate) and not more than faintly turbid by the addition of silver nitrate T. S. (limit of chloride).

On gently warming Calcium lactate with a little sulphuric acid no odor of rancid fat should be noticeable. (absence of butyric and other fatty acids).

If from 10 c. c. of the aqueous solution (1 in 20) the calcium be completely precipitated by ammonium oxalate T. S. the filtrate should, on evaporation and ignition, leave not

more than 0.0025 gramme residue (limit of magnesium).

(To be continued.)

COMMITTEE ON NATIONAL FORMULARY.

The following is the third installment of some of the new formulas that have been suggested for inclusion in the forthcoming edition of the National Formulary. The Committee is desirous of having them thoroughly tried by pharmacists in different sections of the country so as to avoid as much as possible unfavorable comment after the final publication of the book. Comments and criticisms based on practical experiences will be welcome. All communications should be addressed to the Chairman of the Committee,

PROF. C. LEWIS DIEHL,
932 Cherokee Road,
Louisville, Ky.,

who will submit the comments to the Sub-Committee having the matter in charge.

MISTURA FERRI SALICYLATA.

Salicylated Mixture of Iron. Cohen's Salicylated Iron Mixture.

Sodium Salicylate	125	Gm.
Tincture of Ferric Chloride.	125	Cc.
Ammonium Carbonate	6.5	Gm.
Citric Acid	14	Gm.
Oil of Betula	4	Cc.
Glycerin	175	Cc.
Distilled Water, a sufficient quantity to make	1000	Cc.

Dissolve the Citric Acid in 200 Cc. Distilled Water, add the Ammonium Carbonate and then dissolve the Sodium Salicylate in this solution, add the Tincture of Ferric Chloride, Glycerin and the Oil of Betula, mix and then add sufficient Distilled Water to make 1000 Cc. and filter.

GARGARISMA GUAIACI COMPOSITA.

Compound Gargle of Guaiac. Cohen's Guaiac Gargle.

Ammoniated Tincture of Guaiac	100	Cc.
Compound Tincture of Cinchona	100	Cc.
Clarified Honey	200	Cc.
Potassium Chlorate	40	Gm.
Oil of Peppermint	2	Cc.
Distilled Water, a sufficient quantity to make	1000	Cc.

Place the Clarified Honey in a bottle graduated to 1000 Cc., then gradually add the mixture of the Oil of Peppermint and the Tincture, shaking after each addition. Then add in divided portions with continuous shaking the solution of the Potassium Chlorate in 500 Cc. of Warm Distilled Water, then add sufficient Distilled Water to make the mixture measure 1000 Cc.

NEBULA AROMATICA.

Cohen's Aromatic Oil Spray. Aromatol.

Phenol	.2 Gm.
Menthol	.2 Gm.
Thymol	.1 Gm.
Camphor	.3 Gm.
Benzoic Acid	.3 Gm.
Eucalyptol	.2 Cc.
Oil of Cinnamon	.2 Cc.
Oil of Cloves	.2 Cc.
Oil of Betula	.5 Cc.
Liquid Petrolatum, a sufficient quantity to make	100 Cc.

Dissolve the aromatics in the Liquid Petrolatum and filter.

NEBULA EUCALYPTOLIS.

Eucalyptol Spray.

Eucalyptol	5 Cc.
Liquid Petrolatum	95 Cc.

Mix them.

NEBULA MENTHOLIS.

Menthol Spray.

Menthol	2 Gm.
Liquid Petrolatum, a sufficient quantity to make	100 Cc.

Dissolve the Menthol in the Liquid Petrolatum by agitation in a stoppered bottle.

NEBULA MENTHOLIS COMPOSITA.

Compound Menthol Spray.

Menthol	1. Gm.
Camphor	1. Gm.
Oil of Betula	.5 Cc.
Eucalyptol	.2 Cc.
Oil of Cinnamon	.2 Cc.
Liquid Petrolatum, a sufficient quantity to make	100 Cc.

Agitate the ingredients in a stoppered bottle until solution is obtained, then filter, if necessary.

NEBULA THYMOLIS.

Thymol	1 Gm.
Liquid Petrolatum, a sufficient quantity to make	100 Cc.

Mix them.

INUNCTUM MENTHOLIS.

Menthol Inunction.

Menthol	5 Gm.
Hydrous Wool Fat	95 Gm.

Rub up the Menthol with a portion of the Hydrous Wool Fat till a perfectly smooth mixture is obtained, then add the remainder and incorporate thoroughly.

INUNCTUM MENTHOLIS COMPOSITUM.

Compound Menthol Inunction.

Menthol	5 Gm.
Methyl Salicylate	10 Gm.
Wool Fat	85 Gm.

Dissolve the Menthol in the Methyl Salicylate and thoroughly incorporate the mixture with the Wool Fat.

Compound Menthol Inunction should be kept in collapsible metal tubes, well sealed or in small tightly-stoppered wide-mouth bottles.

PASTA RESORCINOLIS FORTIOR, LASSAR.

Lassar's Stronger Resorcin Paste.

Resorcinol	20 Gm.
Zinc Oxide	20 Gm.
Starch	20 Gm.
Liquid Petrolatum	40 Gm.

Thoroughly triturate the Zinc Oxide with sufficient of the Liquid Petrolatum to make a thin smooth paste. Reduce the Resorcin to a very fine powder, mix it with the Starch and add the mixture to the Zinc Oxide paste and triturate till a uniform smooth mixture is obtained, gradually adding the remainder of the Liquid Petrolatum and thoroughly incorporating the mixture.

MEL ROSAE CUM BORACIS.

Honey of Rose with Borax.

Borax in fine powder	10 Gm.
Glycerin	5 Gm.
Honey of Rose	85 Gm.

Mix the Borax with the Glycerin, then add the Honey of Rose and stir till dissolved.

MEL SODII BORATIS.

Mel Boracis. Honey and Borax.

Borax, in fine powder	10 Gm.
Glycerin	5 Gm.
Clarified Honey	85 Gm.

Mix the Borax with the Glycerin, then add the Honey and stir till dissolved.

THE DRUGGIST AND THE MEDICAL ALMANAC.

"Soon will the festive almanac men of the nostrum makers begin to flood the innocent and defenseless public with their nauseating booklets, each bearing on its back cover the printed endorsement of their truck by the retail druggist. And the pity of it is that many druggists will 'fall for it,' as the expressive slang phrase is. But there is some consolation in the fact that an increasing number of druggists have seen a light, and have seen that the more intelligent of their customers have seen the same light, and are no longer advertising to the public that they are partners with the nostrum people in their gentle little game of gulling the unsophisticated. The time is not yet ripe for the druggist to refuse entirely to handle nostrums, but the time is at hand, and has been at hand for some years, when it pays druggists to let it be known that they do not endorse false statements published broadcast by the nostrum makersr."—*Druggists' Circular.*

Editorial Notes and Announcements

Committee on Publication:

JOS. W. ENGLAND, *Chairman*, Philadelphia, Pa.
GEO. M. BERINGER.....Camden, N. J
F. W. MEISSNER.....La Porte, Indiana
JOS. L. LEMBERGER.....Lebanon Pa.
FREDERICK J. WULLING...Minneapolis, Minn.
Ex-Officio: THE EDITOR, ASSOCIATE EDITORS AND TREASURER.
JAMES H. BEAL, Editor.....Scio, O.
C. LEWIS DIEHL.....Louisville, Ky.
Associate Editor and Reporter on the Progress of Pharmacy.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

RULES OF CENSORSHIP.

1. All contracts for advertising are accepted subject to revocation at the discretion of the Publication Committee.
2. No advertisement will be accepted for any article or service, the sale or furnishing of which is illegal in the state of publication or in any state in which the JOURNAL circulates.
3. Advertisements will not be accepted for articles belonging to the class of preparations commonly known as patent medicines, nor for any medicinal preparation advertised directly to the laity, or which is advertised in such a manner as to encourage self medication.
4. Copy which is vulgarly or extravagantly worded, or which makes extravagant claims of therapeutic virtues will not be accepted.
5. No advertisement will be accepted which by intent or inference would result in deceiving, defrauding or misleading the reader.

<>

THE HYDRASTIS SITUATION.

The timeliness of the paper on Hydrastis Cultivation by Prof. John Uri Lloyd is emphasized by the following item clipped from a recent market report:

"Golden Seal Root—Continues to adance, the market displaying great firmness, $6 @ $6.25 per pound for whole root, and $6.25 @ $6.50 for powdered being asked. It is reported from a leading quarter that a canvass of three counties in West Virginia disclosed but one small patch of the root."—*Pharm. Era.*

Prof. Lloyd's long study of the subject enables him to speak as one having authority, and not as the scribes who have only second-hand information. His paper presents several new and interesting items regarding the cultivation of this highly important drug that have not been previously published.

<>

EX-POST-FACTO OBJECTION TO LEGISLATION.

In the past, members of the drug fraternity have been famous for filing their objections to proposed legislation or executive action after these had become established facts, when objections were useless.

In this issue appears a proposed ruling of the U. S. Board of Food and Drugs Inspection regarding the importation, transportation and sale of certain narcotic drugs and their preparations.

The proposed ruling is far-reaching, and in some respects perhaps merits the adjective, drastic. If any legitimate use of these drugs will be interfered with by the operation of the ruling, now is the time to present the evidence.

The same advice will apply in regard to the standards for certain National Formulary drugs and chemicals proposed by the Committee on Unofficial Standards. Objections to these will be useless after they have been incorporated in the National Formulary and have become a part of the law.

<>

WHEN IS AN APOTHECARY NOT AN APOTHECARY?

Some light—or the reverse—is thrown upon this subject by a recent decision of the U. S. Circuit Court of Appeals in the cases of H. K. Mulford & Co., Smith, Kline & French, and Hance Brothers & White, plaintiffs in error, vs. United States, defendant in error. Each of the plaintiffs in error sought to have set aside a judgment of the District Court by which they have been held liable to the payment of $200.00 revenue tax as rectifiers of spirits, because of the recovery of alcohol from the marc left in the preparation of tinctures of vanilla, ginger, etc. The Circuit Court affirmed the judgment of the District Court and denied the relief asked for. The portions of the law construed by the Court are as follows.

"Rectifiers of distilled spirits shall pay $200.00. Every person who rectifies, purifies or refines distilled spirits or wine by any other process than by original and continuous distillation from mash, wort or wash, through

continuous closed vessels and pipes until the manufacture thereof is complete * * * shall be regarded as a rectifier, and as being engaged in the business of rectifying."

Also the exempting provision that no tax shall be imposed "upon apothecaries as to wines and spirituous liquors which they use exclusively in the preparation or making up of medicines."

The learned judge says: "The exemption does not embrace one who recovers alcohol from a substance with which it has been previously mixed. Such a person is not one of the apothecaries referred to in the exempting clause." And again: "The recovery of spirits from the dregs of vanilla bean or ginger root is not the business of an apothecary; the compounding of medicines is:"

In the light of the learned judge's dictum, the Professors of Pharmacy have been making a mess of it; for ever since colleges of pharmacy have existed they have been teaching their students that the recovery of alcohol from marcs and percolates was an essential and imporant part of the apothecary's business. Even the esteemed U. S. P., which, by act of Congress, is presumably a part of the law of the land, makes the same great blunder, since it frequently directs the humble apothecary to "recover" or "distill off" the alcohol from percolates, etc., and if he should fail to do so, he should be liable for the sale of adulterated drugs. Evidently he is to be fined if he does not, and fined if he does.

Of course, what the Court says is law, but it is somewhat disconcerting to discover that a judge who has never studied pharmacy, after listening to the arguments of a couple of lawyers whose knowledge of the subject was coextensive with his own, should know more about what constitutes the proper business of an apothecary than those who have devoted their lives to the teaching of the subject.

<>

HONORS TO PROF. CHARLES CASPARI.

The resolutions of appreciation, ordered by the Council to be presented to the retiring General Secretary, Prof. Charles Caspari, were presented to him by the chairman of the committee, Professor Remington, at the Hotel Stafford, Baltimore, on the evening of December 26, 1911. The occasion was informal, John F. Hancock, our veteran ex-President, in the chair. The resolutions, beautifully engrossed, bound in blue leather with white superscription, represented the colors of his college. The recipient was then thoroughly surprised by the presentation of a gold watch and jeweled fob, the gift of twenty appreciative friends, whose names were obscured by the presentor under the seasonable title of "Kris-Kringle," and his son, Charles E. Caspari, was present and responded appropriately. To say that Professor Caspari was overwhelmed by these marks of appreciation of his seventeen years devoted service as General Secretary does not fully describe the situation. The happy event was thoroughly enjoyed by all the participants. J. P. R.

Communications and Correspondence

All communications must be signed by their Authors

CHEER FROM PHILADELPHIA..

In January, 1912, the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION was published for the first time: in some such prosaic fashion, History will in the dim future record the events which we are celebrating today. There will be no expression in this brief record of the long debates at the annual meetings, the "ifs" and "ands," the "buts" and "hows," the "pros" and "cons," and even J. W. England's thorough and illuminating reports to the Council, which have proved so convincing to the Association, might probably escape the future historian's eye and pen. There is, therefore, a reason while the facts are fresh in our minds to remind the future great recorder of "events pharmaceutical" that the founding of the JOURNAL was not accomplished without much labor and travail on the part of those who have now brought the venture to the point, of the issue of the first number.

The writer does not include himself among those who have borne the burden and heat of the day, for a word of counsel or advice now and then was all that he could give. What is needed now is the enthusiastic and persistent financial support of our members and non-members. Our editor is able and more than willing to give his best services. Congratu-

lations are in order and the editorial office will soon be flooded with telegrams and letters.

May the new JOURNAL enter upon its career with hope and confidence. May its success grow from year to year as it will prove more and more worthy to represent American Pharmacy and the Association which we love to honor. JOSEPH P. REMINGTON.

<>

AN APPRECIATION OF DR. CHARLES E. DOHME.

DALLAS, TEX., December 13, 1911.

DEAR DR. BEAL—The news of the death of Mr. Charles E. Dohme did not come to me until today.

Mr. Dohme was a grand character, a lovable man who in every walk of his life was a worthy example for those who desire to win the respect of their neighbors and co-workers. He had self-reliance and linked it with concentration to achieve success, not in the narrow meaning which some would give the term, but that broader and better significance which includes service to fellow man. He appreciated the good and beautiful, he was always kind, courteous and generous; in his judgment of others he was just and considerate. He loved truth in all things and exemplified his attachment to that greatest above all attributes in business as well as social activities.

One of the "grand" men in pharmacy has gone to his reward and we have profited because we have known him and shared in his work and its results. We are saddened because of his demise, but are glad to remember that flowers of friendship were given him while he lived, for pharmacists and friends were glad to evidence their apreciation of his worth, a consideration which always found response with him, for he was deeply appreciative.

Others are better qualified and more capable to speak of Mr. Dohme's abilities and accomplishments, but the benefits the writer has shared through his good cheer and advice, his friendship and example, prompt these few words, however feebly and poorly they may be expressed, in the hope that they may be indicative of the esteem for the departed, which so many share.

E. G. EBERLE.

PROPOSED RULING OF THE BOARD OF FOOD AND DRUGS INSPECTION

Regulating the Importation and Sale of Opium, Morphin, Cocain, Coca, Their Derivatives and Preparations.

The indiscriminate and promiscuous use of opium, cocain, their derivatives and preparations is recognized as a great menace to the public health. The administration of these agents, however, by skillful hands contributes much to the relief of pain and suffering. Section 11 of the Food and Drugs Act, June 30, 1906, regulates the importation of any drug which is adulterated or misbranded "or is otherwise dangerous to the health of the people of the United States, or is of a kind forbidden entry into, or forbidden to be sold or restricted in sale in the country in which it is made or from which it is exported." Many foreign counries restrict the sale and use of these agents rigidly. Most of the states have laws regulating the sale and use of these drugs more or less within their borders, but interstate transactions cannot be reached with the result that the states' efforts to stamp out drug addictions are ineffective. This regulation simply extends the system in vogue in most states. For the purpose of cooperation with the states, and in order that these drugs may be available for legitimate purposes and that their illegitimate use be curtailed as much as possible, it is directed that for every importation of cocain, whether purified or otherwise, its salts or derivatives or preparaions thereof, or coca, or any preparation or derivative thereof, shall be filed with the chief or acting chief of the appropriate food and drug inspection laboratory of the Bureau of Chemistry, U. S. Department of Agriculture, at the time of entry, a declaration of the owner or ultimate consignee of the merchandise, in the following form:

IMPORTERS' DECLARATION.

(a)

I.....(name of representative), of the .....(name of firm or corporation), manufacturing chemist or dealer in drugs, do solemnly and truthfully declare that the.... ....(number of pounds or ounces) in..... (number) packages or cases or containers of cocain, its derivatives or preparations; or coca, or derivatives or preparations thereof, more particularly described in the invoice and entry herewith submitted, and imported at .....(port), per.....(steamship), on

the..... day of....., are expressly imported and are intended to be used by..... (name or firm or coporation), in the preparation of medicines, or are to be sold by .....(name of firm or corporation), for medicinal purposes or for manufacturing medicinal agents, and such cocain, or coca, or their derivatives or preparations are not intended to be used in such manner as to render them in any way "dangerous to the health of the people of the United State."

(b) The importation of opium or its preparations and derivatives is prohibited, except for medicinal purposes, by Act of Congress entitled "An Act to Prohibit the Importation and Use of Opium for other than Medicinal Purposes. Approved February 9, 1909." Under *this act the Secretary of the Treasury* prescribed a regulation governing the filing of declarations by importers of opium, its derivatives and preparations, to the effect that such products will not be imported for other than medicinal purposes. This regulation shall govern the importation of these products.

(c) For the purpose of complying with the provisions of the Food and Drugs Act, each and every subsequent purchaser or receiver of such imported opium, morphin, cocain, coca, their derivatives or preparations thereof, shall be required, except as provided below, to file the following form of declaration:

DOMESTIC DECLARATION.

I.....(name of individual or representative) of the.....(name of individual firm or corporation), manufacturing chemist, or wholesaler or retailer or practitioner of medicine, or dentist, or veterinarian, hospital, sanitarium, or any other dealer in or purchaser of drugs, do solemnly and truthfully declare that the.....(number of pounds or ounces) in.....(number) cases or packages, of opium, morphin, cocain, coca, their derivatives or preparations thereof, more fully described by the invoice or bill of lading or bill of sale, purchased from..... (name of individual, firm or corporation), by .....(name of individual, firm or corporation), the.....day of.....are expressly purchased and intended to be used by.....(name of individual, firm or corporation), for treating disease, or in the preparation of medicines or the manufacture of alkaloids or salts of alkaloids, and such preparations or alkaloids, or salts of alkaloids, if sold or given away, are to be sold or disposed of or given away by said firm for medicinal purposes only, and such opium, morphin, cocain, coca, their derivatives or preparations thereof, are not intended for any other but medicinal purposes.

(d) Provided, however, that this declaration is waived in case the purchase is made upon the original written order or prescription of a legally authorized practitioner of medicine, dentistry, or veterinary medicine, which order or prescription shall be dated and shall contain the name of the person for whom prescribed, or if ordered by a practitioner of veterinary medicine, shall state the kind of animal for which ordered or prescribed, and shall be signed by the person giving the order or prescription. Such order or prescription shall be retained on file for a period of five years by the person, firm or corporation who compounds or dispenses the article ordered or prescribed, and it shall not be compounded or dispensed after the first time, except upon the written order of the original prescriber. Should any evidence appear that such prescriber or practitioner is promoting or fostering in any way a drug habit, the privilege of filling his prescriptions shall be withdrawn. Provided further that this declaration shall be waived in the case of purchase made by properly accredited federal or state officials, or purchases made purely for scientific work.

(e) All declarations, prescriptions, orders, and transactions of each and every dealer in these commodities shall be retained on file for a period of five years in the office of the consignor or vendor or compounder or dispenser in separate books or files which shall at all times be open to inspection by properly accredited government and state officials.

(f) The terms "for medicinal purposes only" and "for treating disease" shall mean the use of opium, or morphin, or coca, or cocain, or preparations or derivatives thereof for the treatment, mitigation, or prevention of disease of man or other animals. The simple use of any of these products for inducing sleep in infants or similar purposes is not properly called "for medicinal purposes" or "for treating disease."

(g) In order that the public may be advised of the poisonous nature of any and all of the above drugs, each and every package containing same shall bear in conspicuous manner on the label or labels of the package, including any wrapper or cover, the word "poison" in uncondensed gothic type, and the skull and

crossbones, all printed in red on a white background or white on a red background.

(h) Cocain, manufactured, crude or otherwise, its salts, derivatives, or preparations thereof, coca, or any derivative or preparation thereof, imported for medicinal purposes, may be entered for immediate transportation in bond, or consumption, or for warehousing at the following named ports and no others: Baltimore, Boston, Buffalo, Chicago, Detroit, Honolulu, New Orleans, New York, Philadelphia, San Francisco, San Juan, Seattle, and St. Louis. Delivery will be made only when the chief or acting chief of the port laboratory is satisfied that the importations are for medicinal purposes only.

(i) The manner of entering opium, its derivatives or preparations and the minimum size packages containing same is provided for by Treasury Decision No. 29,657. The entire number of packages of cocain, purified or otherwise, coca, or any derivative or preparation of such substances offered for importation shall be ordered into the appraiser's warehouse for examination, and no delivery shall be made of cocain or salts of cocain, either singly or assorted in quantities or packages containing less than twenty-five ounces; nor of coca or any preparation made from same in quantities or packages containing less than one hundred pounds, nor of crude cocain or any other antecedent used in the manufacture of cocain or salts of cocain in quantities or packages containing less than ten pounds, and then only upon the report of the Bureau of Chemistry as to the quality, purity, and fitness for medicinal or manufacturing purposes, and upon the compliance with all laws and regulations governing importations of drugs and medicines.

(j) The following are the principal products affected by this regulation: Opium, codein, morphin, heroin, dionin, peronin, diacetyl morphin, coca, cocain, their salts and derivatives and any preparation derived from or containing any of the before mentioned bodies.

(k) In order that there may be readily available a complete record of all imported drugs, subject to this regulation, and disposition and uses to which they are put, all importers, jobbers, wholesalers, retailers, compounders, dispensers, or other dealers shall report to the Department of Agriculture at Washington, D. C., on the first of January of each year the amounts on hand, the amounts imported, purchased or received during the year and the disposition and use made thereof.

(l) It is suggested that the report be made in the following form:

	Amt's on hand. Jan. 1, 1912.	Jan. 1, 1913.	Amt. imported, purchased or received.	Amt. sold or disposed of during year.
Opium	.....	.....	.....	.....
Morphine and its salts...	.....	.....	.....	.....
Cocaine and its salts...	.....	.....	.....	.....
Coca	.....	.....	.....	.....
Heroin and its salts...	.....	.....	.....	.....
Codein and its salts...	.....	.....	.....	.....
Diacetyl morphine and its salts...	.....	.....	.....	.....
Other products affected	.....	.....	.....	.....

	Used for manuf'g dispensing, etc., purposes.		
	Amt. used.	For manuf'g what?	How much manuf'd of each.
Opium	.....	.....	.....
Morphine and its salts...	.....	.....	.....
Cocaine and its salts...	.....	.....	.....
Coca	.....	.....	.....
Heroin and its salts...	.....	.....	.....
Codein and its salts...	.....	.....	.....
Diacetyl morphine and its salts...	.....	.....	.....
Other products affected	.....	.....	.....

<>

THE REPLY BY GEO. M. BERINGER.

December 22, 1911.

Bureau of Food and Drug Inspection, United States Department of Agriculture, Washington, D. C.:

GENTLEMEN—Your favor of December 14th with enclosure, copy of "Tentative Food Inspection Decision Regulating the Importation and Sale of Opium, Morphin, Cocain, Coca, their Derivatives and Preparations," was duly received. I have given this draft careful consideration, and in accordance with your request, I will venture to expres my opinion and criticism thereon.

The object that you have in view to suppress the indiscriminate and promiscuous use of the narcotic drugs mentioned is one that meets with my hearty approval. Section 11 of the Food and Drugs Act is cited as the authority for such decision and regulation.

From my understanding of this section of the Food and Drugs Act, June 20, 1906, I fail to see wherein it can be broadened to cover state or intra-state commerce. It appears to me to specifically apply to foods and drugs which are *being imported* or *are offered for import* into the United States and provides a method for the decision of the admission of foods and drugs of proper quality and for forbidding entry to those that are adulterated or misbranded or otherwise dangerous to the health of the people of the United States.

Under this section, in my opinion, a declaration of the importer is fully justified and the form suggested under paragraph (a) may prove satisfactory.

Paragraph (b) relates to the enforcement of the act of February 9, 1909, prohibiting importation and use of opium for other than medicinal purposes and appears to be in harmony with that act.

Paragraph (c), providing for domestic declaration, does not appeal to me as coming under the provisions of either section No. 11 of the Food and Drugs Act or of the special act of February 9, 1909. As much as such regulation may be desired I do not believe that it is now warranted by the existing law. Further, the form proposed covers the purchase of any of the prescribed drugs by an indivdual, firm or corporation either as manufacturing chemist, wholesaler, retailer, practitioner of medicine, dentistry or veterinarian as a sanatarium or any other dealer in or purchaser of drugs. This aims to control not only inter-state commerce in these drugs, but likewise intra-state commerce in these drugs. I doubt if the latter control comes within the jurisdiction of a national government department.

Section (d) likewise covers such purely local business as well as inter-state dealings in prescription sales of these drugs. Here again I doubt if it is within the province of the National Government to enforce such regulations which appear to be properly a part of the police powers of each state. In many of the states the anti-narcotic laws already passed practically provide for such regulation.

The remarks on paragraph (d) likewise apply to paragraph (e).

In paragraph (f) I understand, of course, that your aim is to prevent the sale of infant cordials and anodynes containing Opium or Morphine. In doing this, however, the wording would conflict with the sales of such household remedies as Paregoric and Brown Mixture which are not infrequently administered to infants. The remarks as to the jurisdiction of your department under paragraphs (d) and (e) likewise apply to this paragraph.

Paragraph (g) relates to the proper labeling of such poisonous drugs. This is provided for in many of the state laws covering the sales of such remedies which provide for the skull and crossbones poison label in red, but, as a rule, exempt from this provision preparations of Opium containing not more than two grains per fluid ounce. This likewise suggests a conflict with the regulations of the state laws and your proposed regulation by inspection decision, and here again the question of jurisdiction comes up.

Paragraph (h) being a regulation relating to the customs should be passed upon by the Treasury Department.

Paragraph (i) relates to importations and their proper entering. This is a matter which must be left to the Treasury Department or the combined Treasury and Agriculture Departments for decision as it is purely a matter of customs regulation.

Paragraph (k), providing for a complete record to be kept by all importers, jobbers, wholesalers, retailers, compounders, dispensers or other dealers and a report from each of these to the Department of Agriculture on the first of January of each year is, in my opinion, impracticable, even if it were within the proper bounds of a decision of the Board of Food and Drug Inspection or properly considered as covered by the Food and Drugs Act of June 30, 1906. It certainly would not be practicable for each physician and each retail druggist of the country to keep a record of all of the small amounts of Opium, Morphine, Coca, etc., dispensed on the prescription work during a year. To require that every time Laudanum, Paregoric and Dover's Powder are made that a record should be kept of the amounts of Opium consumed therein would possibly be no great hardship, but the regulation that every time a prescription calling for a few grains of Opium in pills, suppositories or ointment is dispensed, that a record must be kept and reported is impracticable. Morphine is one of the most commonly prescribed medicaments usually in comparatively small quantities, yet in the aggregate enormous amounts are used

during the year. To keep track of such small dispensings is not practicable.

I appreciate the fact that in paragraph (d) exemption of the declaration is waived in case the purchase is made upon the original written order or prescription of a legally authorized practitioner of medicine, dentistry or veterinarian medicine, and possibly I have erred in construing that a record would have to be kept of such dispensings. However, the wording of paragraph (k) covers retailers, compounders and dispensers, and would seem to imply the correctness of such a construction.

I am compelled to differ from the regulations as outlined not because I am not in sympathy with the object desired to be attained, but because I believe there is no provision or authority contained in the present law extending the jurisdiction of the Bureau of Chemistry in the matter contemplated by this proposed inspection decision. If there is need for a national law that shall take out of the jurisdiction of the states the police regulation relating to the sale and use of narcotic drugs, then it should be made a special enactment of the National Government so that its legality would be above suspicion.

If such legislation is called for, then an act should be carefully prepared so as to not unnecessarily interfere with legitimate sale and proper use of medicines. Those who are acquainted with the conditions existing in the practice of medicine and pharmacy and the conduction of the drug business should be consulted so that no unnecessary interference with business nor hardship will be occasioned in the proper discharge of their vocation.

Yours respectfully,

GEORGE M. BERINGER.

THE NEEDLESSNESS OF WORRY.

"There are two reasons why man should not worry, either one of which must operate in every instance. First, because he *cannot* prevent the results he fears. Second, because he *can* prevent them. If he be powerless to avert the blow, he needs perfect mental concentration to meet it bravely, to lighten its force, to get what salvage he can from the wreck, to sustain his strength at this time when he must plan a new fuure. If he *can* prevent the evil he fears, then he has no need to worry, for he would by so doing be dissipating energy in his very hour of need."—*William George Jordan.*

Council Business

COUNCIL LETTER NO. 7.

PHILADELPHIA, PA., December 11, 1911.

To the Members of the Council:

Motions No. 16 (*Date of Salary of General Secretary and Editor of the* JOURNAL), and *No.* 17 (*Election of Members; applicants Nos.* 42 *to* 81 *inclusive*) have each received a majority of affirmative votes.

The Denver Branch has elected John A. Martin, of Denver, as representative to the Council to succeed A. W. Clark, whose term expires this year.

Motion No. 18 (*Election of Charles M. Ford Local Secretary for* 1912). Moved by J. W. England, seconded by J. H. Beal, that Charles M. Ford, of Denver, Colo., be elected Local Secretary in place of E. L. Scholtz, resigned.

It is very important that the Local Secretary be elected at an early date, and you are therefore requested to send in your vote at once.

Charles Emile Dohme, of Baltimore, Md., died on December 7, 1911. Mr. Dohme joined the American Pharmaceutical Association in 1863, almost fifty years ago. He has been a most loyal member, was President of the Association in 1898-99, and has rendered important services to American Pharmacy, especially as Chairman of the Board of Trustees of the U. S. Pharmacopœial Convention from October, 1901, to May, 1910.

J. W. ENGLAND,
Secretary of the Council.

415 N. 33d St.

<>

COUNCIL LETTER No. 8.

PHILADELPHIA, PA., Dec. 27, 1911.

To the Members of the Council:

Motion No. 18 (Election of Charles M. Ford Local Secretary for 1912), has received a majority of affirmative votes.

The following communication has been received from Chairman J. A. Koch of the Finance Committee:

"As the fiscal year of the Association has been changed to cover the period from January 1 to December 31, all the present appropriations will lapse on the 31st. The Finance Committee, therefore, presents to

the Council the enclosed budget of appropriations for the year 1912."

Proposed budget of appropriations for the year 1912:

Salaries	$5,500 00
Journal	3,500 00
Proceedings	1,500 00
Clerical expenses, Secretary's office	1,000 00
Printing, stationery and postage	500 00
Miscellaneous expenses	500 00
Stenographers	200 00
Badges and bars	75 00
Journals for Reporter	35 00
Committee on Membership	50 00
Traveling expenses	200 00
Premium on treasurer's bond	37 50
Insurance	50 00
Certificates	50 00
Section on Scientific Papers	25 00
Section on Education and Legislation	25 00
Section on Practical Pharmacy	25 00
Section on Historical Pharmacy	25 00
Committee on Unofficial Standards	150 00
National Formulary general expenses	1,000 00
Reappropriation of balance in National Formulary Experimental fund	728 62
Reappropriation of unexpended portion of Special Committee on Membership appropriation	84 81
Total	$15,285 93

Motion No. 19. (Approval of budget of appropriations for 1912.

Do you approve of proposed budget of appropriations for 1912 as above submitted?

J. W. ENGLAND, *Secretary of Council.*

FADS AND PHILOSOPHIES.

"Everything that is great in life is the product of slow growth; the newer, and greater, and higher, and nobler the work, the slower is its growth, the surer is its lasting success. Mushrooms attain their full power in a night; oaks require decades. A fad lives its life in a few weeks; a philosophy lives through generations and centuries. If you are sure you are right, do not let the voice of the world, or of friends, or of family swerve you for a moment from your purpose. Accept slow growth if it must be slow, and know the results *must* come, as you would accept the long, lonely hours of the night,—with absolute assurance that the heavy-leaded moments *must* bring the morning."—*William George Jordan.*

Obituaries and Memorials

CHARLES E. DOHME.

1843-1911.

After an illness of four years, Charles E. Dohme died at his home in Baltimore, on December 7, 1911.

Charles Emile Dohme was born at Obernkirchen, Schaumburg, Germany, on March 12, 1843, and came to this country with his parents in 1851. He attended Knapp's Institute in Baltimore, and subsequently entered the drug store of A. P. Sharp, at the southwest corner of Howard and Pratt Streets, Baltimore, as an apprentice, serving the full term of four years.

In the choice of vocation, Mr. Dohme was largely influenced by his older brother, the late Louis Dohme, who had obtained a position in the store of Mr. Sharp some years before. Like Louis Dohme, Charles matriculated at the Maryland College of Pharmacy and took his degree. He then obtained a position as clerk in the pharmacy of George L. Kidwell & Son, of Georgetown, D. C., and subsequently went with Andrews & Thompson, of Baltimore, with whom he remained until 1866, when he was admitted as a partner in the firm of Sharp & Dohme, being placed in charge of the manufacturing department. There his influence soon made itself felt in a signal manner. A large part of the apparatus needed in the various processes had to be devised, and in this work he developed an extraordinary resourcefulness. His practical mind enabled him to overcome one mechanical difficulty after another, and to devise a long series of appliances which not only facilitated operations, but produced a previously unattained perfection of products.

Mr. Dohme took a deep interest in the scientific and ethical sides of pharmacy. He identified himself closely with the Maryland College of Pharmacy. He supported it freely and gave encouragement in other forms. He used his influence to bring about a raising of standards, and encouraged young men who gave special promise. Besides, he sought to establish cordial personal relations between the faculty, the members of the College and the students, and on numerous occasions gave receptions and entertainments at his home

which were notable for their enjoyable character. In 1896 he was elected president of the College, serving one year.

He became a member of the American Pharmaceutical Association in 1863. In 1889-90 he held the position of local secretary; in 1890-91 he was second vice-president; in 1895 he was elected first vice-president, and in 1898 he was chosen president. For twelve years he was a member of the Council, and in 1900 was elected a member of the Board of Trustees of the United States Pharmacopœial Convention. In 1901, Mr. Dohme became chairman of the Board, and had a share in the work of bringing out the Spanish translation of the Pharmacopœia. He was a member of the Maryland Pharmaceutical Association and contributed numerous papers on pharmaceutical processes to the proceedings of various associations.

Mr. Dohme's sociability was strikingly shown by the fact that he became an active member of the Baltimore Drug Trade Bowling Club some ten years ago. He belonged also to the Germania Club, the leading German club of Baltimore. Besides attending many meetings of pharmaceutical associations, he taveled extensively in this country and abroad, and his home is filled with pictures of the places he had visited. He was a great reader and, notwithstanding his active professional and business life, possessed an intimate acquaintance with the thousands of books in his private library. He was a liberal patron of the arts and rarely missed a performance of grand opera or a high-class concert. His love of music led him to join the Mount Vernon Methodist Episcopal Church choir, and he was one of the organizers of the old Oratorio Society, in whose renditions he took an active part.

The year 1866 was a momentous one in the life of Mr. Dohme, for not only was he admitted to the firm in that year, but he also married, his bride being Miss Ida Schulz, of Baltimore. The union was blessed wih three daughters and a son, the latter being Dr. A. R L. Dohme, and the former Miss Adele Dohme, Mrs. Hans Von Marees, and Mrs. Charles E. Holzhauer, of Newark, N. J.

The funeral took place from his home on December 9, 1911. Rev. Richard W. Mogue, pastor of the Protestant Episcopal Church of the Ascension, conducted the services.

Eight employes of the firm served as active pallbearers, while the following acted as honorary pallbearers:

Henry T. Hilken, Charles Caspari, Jr., John F. Hancock, D. M. R. Culbreth, R. M. Waring, J. C. Muth, H. B. Gilpin, G. F. Bailey, H. P. Hynson, W. A. Sailer, J. H. Winkleman and H. P. Merryman.

Burial was in Loudon Park Cemetery.—J. W. E.

<>

WILLIAM MUIR.

1950-1911.

William Muir died at his home, 356 First Street, Brooklyn, November 24, 1911, aged sixty-one years. He was born at Glasgow, Scotland, in July, 1850. When a lad his parents came to this country and settled in Brooklyn. The boy obtained his early education in the public schools and then took a place in the drug store of Dr. J. D. Farwell, Joralemon and Court Streets. He matriculated at the College of Pharmacy of the City of New York, and received his diploma in 1870. About the time of his graduation, his employer opened a store at Broadway and Fourth Streets, New York, and in this he worked for some time. Then he clerked for Charles W. Kitchen, at Fulton and Washington Streets, Brooklyn, and for William Vincent, of the same city. In 1884, Mr. Muir went into business for himself, at Bedford avenue and South Second street, Brooklyn. Two years later he moved to Broadway and Gates avenue, where he remained until June 14, 1898. Since that time he had not been actively engaged in the drug business, it being understood that he retired with a competency.

He was always a strong organization man. As a young man he was one of the founders of the Alumni Association of the College of Pharmacy of the City of New York, and was largely responsible for the formation of the Kings County Pharmaceutical Society. In July, 1879, the first Kings County Board of Pharmacy was organized. Dr. Muir became a member of that board in 1894, and remained in it until the Greater New York board, of which he was also a member, took its place in 1901, and Dr. Muir was transferred to the latter. He remained a member of the State Board until August 1, 1910, when it went out of existence under the pharmacy law of that year, to be succeeded by one appointed by the regents of the State Univer-

sity. Dr. Muir was elected vice president of the old board in 1908 and its president the following year.

Owing to the efforts of Dr. Muir more than anyone else the Brooklyn College of Pharmacy has grown in twenty yars to a large and flourishing institution, owning a building and equipment valued at something like $100,000. As a result of his work the college, in 1897, gained legislative permission to grant the degree of Doctor of Pharmacy, and he was one of the first to receive it.

He joined the New York State Pharmaceutical Assocation in 1896, and was elected president in 1898, and was one of the founders of the National Association of Retail Druggists. He attended every meeting of this latter organization from the time of its formation up to last year, and was a loyal and devoted member. Dr. Muir joined the American Pharmaceutical Association in 1907.

The deceased is survived by a daughter, brother and sister. He was a Mason and took great interest in the work of that fraternity. The funeral services were held first by his lodge, at his late residence, and then at Plymouth Church (the old Beecher church), his usual place of worship.—*J. W. E.*

<>

MEMORIAL TABLET TO MAHLON N. KLINE.

On the eve of St. Andrew's Day, 1911, the members of the Brotherhood of St. Andrew, and many friends, attended services at the Church of the Savior, Philadelphia, which marked the unveiling of a tablet in memory of the late Mahlon N. Kline, formerly president of the Smith, Kline & French Co., and one of the foremost figures in American pharmacy.

The services were beautiful and impressive, and the tablet was placed in the wall of the Church of the Savior near where Mr. Kline died, suddenly, two years ago, just as he had arrived to attend a meeting of the Brotherhood, in the work of which he took the deepest interest. The tablet was inscribed as follows:

"In sacred memory of Mahlon N. Kline, accounting warden from 1898 to 1909, this tablet is placed here by his friends to keep in mind his consecrated life and devoted service. From this church his soul began its flight homeward to God on the eve of Advent Sunday, 1909."

Poor, old Rip Van Winkle cried out, on his return from the mountains to Sleepy Hollow, after twenty years' sleep, and no one knew him—"How soon we are forgotten when we are gone!" But this is only a half truth in the case of a life like that of Mahlon N. Kline, whose fine Christian manhood and strong personality exerted an influence upon his fellow men, in the development of individual character, that was positive and far-reaching, and will last through the years to come.—*J. W. E.*

<>

A. K. FINLAY.

Alexander Kirkwood Finlay, of New Orleans, La., died October 20, 1911, at the age of sixty-eight years. He was a native of Ireland, and long a resident of the Crescent City. For many years he had a store at the corner of Camp and Julia streets, and later operated a prescription laboratory in the Medical Building on Baronne street. His reputation as a pharmacist was national. He retired from active business ten years ago.

He was a member of the first Louisiana Board of Pharmacy, serving on that body from 1888 to 1893, several years as president. He was one of the organizers and first vice president of the Louisiana Pharmaceutical Association in 1882, and its president in 1885-6. In 1883, he assisted in the organization of the National Retail Druggists' Association and was elected as a member of the first executive committee. Later he became a vice president of the organization. Mr. Finlay was a life member of the American Pharmaceutical Association which he joined in 1885. He was elected to the presidency of the Association in 1890.—*J. W. E.*

RESULTS VERSUS MOTIVES.

"We never see the target a man aims at in life; we see only the target he hits. We judge from results, and we imagine an infinity of motives that we say must have been in his mind. No man since the creation has been able to live a life so pure and noble as to exempt him from the misjudgment of those around him. It is impossible to get aught but a distorted image from a convex or a concave mirror."—*William George Jordan.*

Proceedings of the Local Branches

PHILADELPHIA BRANCH.

(Scientific Secion.)

The Scientific Section was convened on Tuesday evening, December 5, for the consideration of the subject, "The Physical Constants of the U. S. P."

Dr. George H. Meeker of the Medico-Chirurgical College delivered the principal paper and gave numerous suggestions as regards the proper choice of constants and the proper constants for the next revision, and recommended that the standards as formulated by the United States Bureau of Standards and the Smithsonian Institution should be as largely as possible adopted. This paper contained so much of valuable suggestions that it is difficult to abstract efficiently, and as a result our readers are referred to the full text of the paper which will be published shortly.

The subject was further discussed by Dr. J. G. Hildebrand of the University of Pennsylvania and Mr. W. T. Toplis. A number of very excellent suggestions and practical considerations of the question were given by both speakers. Dr. Hildebrand spoke especially of temperature in the proper determination of most physical constants and called attention to the difficulty of obtaining and the especial need of accurate temperature determinations. He also said that the boiling point was a far less accurate constant than the freezing point in the determination of the purity of materials. He also described certain apparatus and gave a discussion of specific gravity determination which afforded a very interesting discussion.

Mr. Toplis compared the accuracy of a carpenter in measuring a piece of wood, a skilled steel worker in measuring a piece of steel, and an astronomer in making his measurements, with the pharmacist, the usual analytic chemist, and the physico-chemical investigator respectively, and stated that the accuracy which each of these conditions showed, proved it to be largely a matter of opinion, and that the approximate accuracy of the carpenter was as valuable to him as the extreme accuracy of the astronomer or physico-chemical theorist was to him. He therefore concluded that the accuracy of the constants in the Pharmacopœia should be graded in accordance with the desires of those who were to make the greatest use of them.

The subject was fully discussed by nearly all present.

The meeting was well attended and the interest taken in the discussion of the papers read was most excellent. The meeting throughout proved a most valuable, instructive and interesting evening.

The continuation of the evening's discussion, after the adjournment of the Scientific Section, was also very spirited, and the subject of discussion, The Additions and Deletions for the next U. S. P. was discussed, and in connection therewith, the physical constants were still further discussed.

As a summary of the discussion it may be stated that the standards of the Pharmacopœia may best be controlled by publishing definite and accurate methods by which the constants should be determined and then permitting a reasonable variation in the limits set for these constants. That accurate methods of determination, rather than narrowly defined standards, therefore seem to be the best plan. That the constants which are of distinctive importance on account of the use to which the substance is to be put should be most emphasized and that other constants of minor importance may be more or less ignored.

C. H. KIMBERLY,
Secretary.

<>

PITTSBURGH BRANCH OF THE A. PH. A.

A the December meeting, held on the 14th, of the Pittsburgh Branch A. Ph. A. an unusually attractive program was presented, and the discussions were animated and full of good meat.

The topic, "Microscopical Examination of Powdered Drugs," which was handled by Dr. L. K. Darbaker was of absorbing interest, and proved one of the most instructive features presented before the branch during the closing year. DR. Darbaker used the blackboard freely in illusrating his subject, and in addition to freehand sketches exhibited numerous lantern slide specimens. The speaker evidenced entire familiarity with his subject and seemed as much at home with, and to understand the characteristics of seeds,

leaves, barks and roots of medicinal plants just as a father does his children.

The methods followed by experts in determining the identity of unknown samples of powdered plant drugs was shown, as was also the manner of procedure followed in ascertaining what portion of the plant was present whether leaf, seed, bark, root or wood, then how to recognize the family to which it belongs and finally how to reach the individual identity of the plant from which the sample under investigation is taken.

Dr. A. F. Judd read an editorial from the pen of Dr. J. H. Beal, with comments thereon, upon the subject "The Local Branches," and urged that the methods recommended by Dr. Beal for increasing interest in and attendance upon the meetings of this branch be adopted.

"The main thing is to bring together and harmonize all the association activities of pharmacists, and while it would be advantageous, of course, that as many as possible should be members of the A. Ph. A., such a joint membership is by no means essential o successful coperative work" formed the burden of Dr. Beal's editorial utterances. Dr. Judd said another important suggestion that should be acted upon is to keep in touch with the local newspapers by sending them announcements of the meetings and reports of the papers read. In his argument favoring this phase of activity Dr. Beal says: "If the followers of some fake 'pathy' or the wild-eyed believers in some new medical ism, hold a convention, the papers are filled wth their doings. Why should the fakes and the frauds have all the publicity, while legitimate pharmacy remains unknown and unappreciated?"

Following the above presentation of what ought to be done Dr. F. J. Blumenschein was named as a publicity agent with instructions to cultivate the press, and B. E. Pritchard assigned the duty of arranging for joint meetings with the local Druggists' Association.

Upon suggestion from the president the proposed new formulas for incorporation into the National Formulary were read by title only and referred to the committee appointed at last meeting to investigate and report upon at next meeting.

Dr. Blumenschein took up the subject of "Deletions and Additions in the Pharmacopœia," and gave expression to some radical personal opinions concerning the wisdom of some of the proposals. This precipitated a free-for-all discussion during which a wide variety of ideas with reference to the contents of the published lists were brought out, participated in by Drs. Koch, Judd, Emanuel and Darbaker. The secreary read from he minutes of a meeting of the city of Washington Branch opinions concerning the work that is being done from Dr. Wiley Prof. Remington, Dr. Murray Galt Motter, Dr. that is being done from Dr. Wiley, Prof. Stanislaus, all of whom had participated in a discussion similar to that now being held. Dr. Koch closed the discussion by insisting that "regardless of other men's opinions the members of the Pittsburgh Branch should make their ideas known to the Revision Committee, doing our duty as we see it, whether acceptable to the committee or not."

As the hour reached by this time was 11:30, and as President Campbell, who comes down from Greensburg especially to attend these meetings, was holding his watch in hand in manifest anxiety for fear he would not make his home-returning train, it was wisely concluded to adjourn at this point.

B. E. PRITCHARD, *Secretary.*

<>

NEW ENGLAND BRANCH.

The annual meeting and dinner of the New England Branch was held at Hotel Plaza, Boston, Wednesday evening, December 13. President James F. Fineran presided.

Dinner was served at 6 o'clock, after which the members listened to some very interesting speaking.

The first speaker was Dr. B. H. Smith, Chief of U. S. Food and Drug Inpection Laboratory at Boston. He spoke on the Food and Drugs Act, the causes for its passage and the practical application of its provisions. He explained the difficulties of making decisions and reviewed a number of recent court rulings which affected his department.

The next speaker was Prof. Charles F. Nixon, a member of the U. S. P. Revision Committee, who took up the proposed pharmacopœial additions and deletions. Mr. Nixon also described the methods by which satisfactory formulas and processes were obtained.

Mr. William H. Glover followed with remarks about certain changes proposed for the National Formulary, starting considerable discussion about Liquid Petrox for which a

new formula had been suggested. The concensus of opinion seemed to be that Liquid Petrox was very satisfactory at present.

The election of officers for 1912 resulted as follows: President, Charles F. Nixon, Leominster, Mass.; Vice President, Albert W. Meserve, Kenebunk, Maine; Secretary-Treasurer, R. Albro Newton, Southborough, Mass.; Chairman Committee on Professional Relations, Frank F. Ernst, Jamaica Plain, Mass.; Chairman Committee on Membership, William H. Glover, Lawrence, Mass.

R. ALBRO NEWTON, *Secretary.*

<>

CITY OF WASHINGTON BRANCH.

The City of Washington Branch of the A. Ph. A. met in regular session at the National College of Pharmacy, December 20, 1911. In the unavoidable absence of the President, Vice-Presidents and Secretary, Dr. Henry E. Kalusowski was called to the chair and Dr. M. G. Motter acted as Secrtary.

The minutes of the previous meeting having been extensively printed in the drug journals, their reading was, on motion, dispensed with.

The first business of the evening was the report of the Committee on Nominations, which was as follows:

Your Committee on Nominations begs to submit the following recommendations:

1. That the representative of the Branch on the Council of the A. Ph. A. serve also as Secretary of the Branch. This, for the reason that such practice seems to be growing among other branches; the advantages are sufficiently obvious.
2. For officers and committeemen for the ensuing year: President, Lewis Flemer; First Vice-President, Lyman F. Kebler; Second Vice-President, Henry E. Kalusowski; Secretary and Council Member, Samuel L. Hilton; Treasurer, Wymond H. Bradbury; Committee on Membership, Herbert C. Easterday; Committee on Legislation, Willard S. Richardson; Committee on Medical Relations, Frank C. Henry; Committee on Scientific Communications, Rodney H. True; Committee on Publicity, Martin I. Wilbert.

Respectfully submitted,
MURRAY GALT MOTTER,
Chairman.

M. G. Motter moved that the report be adopted and the acting Secretary directed to cast the ballot of the Branch for the officers and committeemen named.

S. L. Hilton expressed his appreciation of the honor of serving as Secretary of the Branch, but explained that in view of other pressing duties he would be obliged to decline the nomination; he therefore mover, as an amendment, to substitute the name of Henry B. Floyd, Professor of Commercial Pharmacy in the National College of Pharmacy, for his own. Seconded by Wymond H. Bradbury. After some discussion, the amendment was put and carried; the report, as amended, was adopted, the acting Secretary cast the ballot as directed and the Chair announced the officers elect.

The paper of the evening, by Prof. W. A. Puckner, of Chicago, on "The Physician and the Pharmacist," was read by the acting Secretary.

The ensuing discussion was limited largely to the possibilities of developing in connection with the retail drug business, such laboratory work as is necessary for making the several official preparations.

H. E. Kalusowski expressed the belief that many fluidextracts can be prepared far more satisfactorily and efficiently in a small way by the pharmacist than in a large way, where often unidentified drugs in bulk are turned over to an incompetent, underpaid and inexperienced boy. The choice of alcohol is important and the details of the method of preparing the extract require skill and experience.

W. H. Bradbury does not believe that the retail druggist will return to the making of fluidextracts; on the contrary, he is getting farther and farther away from it, and the young graduate, though better educated and trained at the outset, is not inclined to take up such work.

S. L. Hilton thinks that the retail *pharmacist* is getting back to making a large number of preparations for himself, though the commercial druggist may not. There are obviously two classes of men in the business, the scientific and the commercial.

Worth Hale thought the physician would go a long way to patronize a pharmacist of this type. He has found that the preparations on the market vary widely, regardless of the reputation of the manufacturer. His own ergot preparations, for instance, have been found to be distinctly stronger than the market product, though some of the latter came direct from the manufacturer. With reference to digitalis, the crude

drug certainly does not vary as much as do the finished products.

H. E. Kalusowski offered as an explanation of the present day conditions the suggestion that the manufacturer has hypnotized the retailer into the belief that he can do the work on a large scale cheaper as well as better.

S. L. Hilton cited a recent calculation as to the cost of certain tablets, which have been cut and re-cut; after allowing the usual percentages for cost of materials, labor, sales, etc., the manufacturer still has a profit of 90 per cent. The retailer, with a small tablet machine, can easily turn the trick himself. He has found that he can make certain fluidextracts at a cost considerably lower than the prices offered by the large manufacturers.

W. S. Richardson quoted the man who said he could sell witch hazel at *any* price, so long as he had a spiggot and a barrel in his back room; and W. O. Emery told of a junk dealer who bought empty arrack barrels, filled them with cologne spirit, and then sold the contents as arrack.

The members present then discussed the third instalment of proposed new formulas for the N. F. Several of the members expressed the belief that some at least of these new additions would serve no good purpose other than to fill a somewhat vociferous demand from a very limited section.

Discussing the formula for Honey of Rose with Borax, H. E. Kalusowski expressed himself as pleased at seeing this old preparation rejuvenated. He could not recall ever having seen a formal pharmaceutical process suggested for it.

The discussion recurred to the question of patents and attention was called to the fact that coincident with the increase in their manufacture there has been a decrease in the advertising, or perhaps methods and localities have changed. Mr. Bradbury remarked that many of the patents undoubtedly had some virtue and that this fact was practically admitted by the Council on Pharmacy and Chemistry, which had admitted many of them to its quasi-scientific list.

There being no further business, the Branch, on motion, adjourned at 10:20.

MURRAY GALT MOTTER,
Acting Secretary.

DENVER BRANCH.

Members of the Denver Branch of the American Pharmeceutical Association gathered at the Traffic Club at 6:30 p. m. Tuesday evening, December 19th, as guests of the Davis-Bridaham Drug Co., who entertained the members at dinner.

After enjoying the elaborate meal the meeting was called to order at 8:10 by Pres. Best.

Minutes of the previous meeting were read and approved.

The president stated that the nomination of officers for 1912 was in order, whereupon Mr. Ford moved that the present officers be renominated for another year. The motion was seconded and carried. A further motion that nominations be closed was also seconded and carried.

Mr. Martin was then called on to report what arrangement his committee had made with the city association regarding the entertainment of the A. Ph. A. next August.

Mr. Martin reported that the city association had appointed a committee of four, Healy, Clark, Wilson and McKenzie, who with the local secretary of the A. Ph. A. as chairman of this committee, was to have entire charge of affairs. This committee has power to appoint sub-committees as it may require.

It was moved and seconded that the conference committee's report be accepted and the committee discharged. Motion carried.

The Membership Committee reported five new members as follows: Messrs. John A. Baily, Edward Eberhardt, Wm. J. Wobido, L. A. Jeancon, and Edgar C. Healy. The report was accepted and the new members were welcomed by the president.

The chair then called on Mr. Martin, council member, to state if or not he had received any word from the council regarding the election of a local secretary to succeed Mr. Scholtz who resigned. Mr. Martin said that Mr. England had nominated Mr. C. M. Ford as local secretary which motion had been seconded by Mr. Beal and that the question had been put to the council for a vote. He had not heard further on the matter but thought Mr. Ford would be elected to fill the vacancy.

The secretary then read a message from Mr. A. W. Scott of Ft. Collins, which had been received by long distance phone. Mr. Scott expressed his regrets for being unable

to attend the Denver meeting and extended his best wishes for an enjoyable evening.

Mr. Nitardy stated that the By-Laws of the branch were not adequate and should be amended. He offered the following as a suitable set of by-laws.

By-Laws of the Denver Branch of the A. Ph. A.

ARTICLE I.

OFFICERS AND COMMITTEES.

1. Officers—The officers shall consist of a president, first and second vice-presidents, and a secretary-treasurer.

2. Executive Committee—The officers of the branch shall constitute the Executive Committee which may transact all business for the branch, unless otherwise provided for. Three shall be a quorum.

3. Standing Committees—Three standing committees shall be appointed by the president at the first meeting after election of officers each year as follows:

(a) Membership Committee—To consist of a chairman and secretary. Its duty shall be to carry on a vigorous campagn for new members; it may use such funds as the Executive Committee shall direct for this purpose and shall make an annual report at the January meetng of the branch.

(b) Program Committee—To consist of a chairman and two associate members. The committee shall, at its first meeting, elect one of its members as secretary. Its duty shall be to provide a suitable and interesting program for all regular branch meetings and shall send a notice of same to the president and secretary of the branch two weeks prior to each meeting.

(c) Committee on Education and Legislation—To consist of a committee of one. The committee may at any meeting make such reports or suggestions as may be desirable or opportune, and shall make an annual report at the January meeting of the branch.

4. Special Committees—The president may, at any time, appoint such special committees and define their duties as may be required for the proper execution of the work of the branch. Such committees shall continue to the end of the fiscal year unless otherwise specified.

ARTICLE II.

ELECTION AND DUTIES OF OFFICERS.

1. The officers shall be elected annually in January.

2. The officers elected shall assume their duties with the adjournment of the January meeting each year.

3. The president shall call all regular and special meetings and preside over same, and perform such other duties as defined in these by-laws.

4. The first vice-president shall assume the duties of the president in his absence.

The second vice-president shall assume the duties of the first vice-president in his absence.

6. The secretary-treasurer shall send a notice of all Branch and Executive Committee meetings to the members of the branch or committee respectively; keep minutes of these meetings; carry on all correspondence for the branch; collect all dues and other moneys; pay out such moneys as authorized by the president or Executive Committee; keep an accurate record of all accounts; make an annual report at the January meeting of each year and perform such other duties as may be directed by the Evecutive Committee.

ARTICLE III.

MEETINGS.

1. Regular meetings of the branch shall be held the evening of the third Tuesday of each month, except during the months of July, August and September. Special meetings may be called by the president at any time. Five members shall be a quorum.

ARTICLE IV.

MEMBERSHIP AND DUES.

1. Any member of the A. Ph. A. shall be eligible for membership in the Denver Branch.

2. The branch dues shall be $1.00 per year, due in January for the ensuing year, or payable at the time of joining the branch.

ARTICLE V.

PUBLICITY.

1. Notice and proceedings of all branch meetings shall be sent to the Journal of the A. Ph. A., the Rocky Mountain Druggist, and such other pharmacal journals as the Executive Committee may direct.

ARTICLE VI.

AMENDMENT OF BY-LAWS.

These By-Laws may only be amended when notice of the proposed change is given at the preceding meeting. A three-fourths vote shall be necessary.

It was moved that the reading of the proposed By-Laws be accepted as the notice for change of By-Laws as required. They will be acted on at the next meeting.

President Best then introduced Mr. George McDermand, chemist of the tar plant of the Denver Gas & Electric Co., who read a paper on the "Manufacture of Coal Tar and Coal Tar Products."

During the reading of the paper Mr. McDermand exhibited samples of the various products referred to and answered many questions on matters related to coal tar, which added much to the value of the interesting paper.

The president then called on Mr. Charles

M. Ford, who presented a paper on "Legalized Adulteration of Food and Drugs."

Mr. Ford's paper created quite a discussion on preservatives, especially Sodium Benzoate.

Mr. W. A. Hover then read some extracts from a proposed ruling of the Department of Agriculture on the restriction and regulation of the sale of narcotic drugs.

Expressions on the traffic were decidedly in favor of prohibiting the manufacture and sale of cocaine entirely on the ground that cocaine does and has done more harm than it can ever do good.

As it was about time for the owl car, the meeting adjourned after giving a rising vote of thanks to the Davis-Bridaham Co. Mr. McDermand and Mr. Ford.

F. W. NITARDY *Secretary.*

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or typewritten.

<>

CARL E. SMITH,
From 1320 Pine St., Philadelphia, Pa.
To 627 Spruce St., Philadelphia, Pa.

THOMAS E. BROWER, Sergt. 1st. Class. H. C.
From Fort Wingate, N. M.
To Fort Greble, R. I.

H. VON OEHSEN, Sergt. 1st. Class. H. C.
From 2111, 18th St. N. W., Washington, D. C.
To 721 13th St. N. W., Washington, D. C.

FAULTS OF TABLET MEDICATION.

"The much-used tablet, compressed or triturate, doubtless renders much medication valueless, and perhaps, fortunately, harmless. The speed of solution of most tablets on the market is problematical, hence if the action of a tablet is immediately desired it should be predissolved, or at least crushed by the teeth before swallowing, and then a good drink of water taken with it. It should not be forgotten that anything that may bite or iritate the membrane of the mouth will do the same to the mucous membrane of the stomach. Hence bromide tablets should never be taken undissolved. Potassium chlorate tablets dissolved in the mouth or swallowed are dangerous. Potassium chlorate solutions for the mouth and throat are valuable, but there is no justification for ever taking potassium chlorate into the stomach or into the system."—*J. A. M. A.*

REMOVING FASTENED STOPPERS.

Regeant bottles holding caustic alkalies, alkaline carbonates, etc., very frequently become fixed, and the usual method has been to tap the stopper with a wooden block or the application of heat to the neck, or a combination of both. Results are poor in certain cases and often culminate in the fracture of the neck. The inverse process may be used to advantage. In other words, freeze the stopper, thus causing a contraction of the stopper from the neck. The bottles which I used for experiment had failed to open under the heating and tapping, and were bad cases of fixed stoppers. The bottles held sodium carbonate that had formed sodium silicate, an excellent cement, and so were firmly fixed. They were inverted in a mixture of crushed ice and calcium chloride, taking care that the freezing solution did not touch the lips of the bottles. After standing twenty minutes, each stopper was removed without the slightest exertion. This is the neatest and safest way to remove stoppers from bromine bottles and other corrosive chemicals.—*Scientific American.*

SPECIAL ATTENTION

Drug stores (snaps) for sale and trade in 48 states. Drug stores handled. Drug jobs in 48 states. Medical practices furnished and handled. Physicians furnished. Established 1904. Strictly reliable. Gilt edge references. Let me know your wants.

F. V. KNIEST, R. P., Omaha, Nebr.